

AMERICAN AGRICULTURIST.

Designed to improve all Classes interested in Soil Culture.

AGRICULTURE IS THE MOST HEALTHFUL, THE MOST USEFUL, AND THE MOST NOBLE EMPLOYMENT OF MAN—WASHINGTON

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Hereafter, beginning with the July number, the *AMERICAN AGRICULTURIST* will be published in both the English and German Languages. Both Editions will be of uniform size, and contain as nearly as possible the same Articles and Illustrations. The German Edition will be furnished at the same rates as the English. For Prospectus see page 192.

June.

"Good Lord! it is a gracious boon
For thought-crazed wight like me,
To smell again these Summer flowers,
Beneath this Summer tree!
To suck once more, in every breath,
Their little souls away,
And feed my fancy with fond dreams
Of youth's bright Summer day;
When rushing forth, like untamed colt,
The reckless truant boy
Wandered through green woods all day long,
A mighty heart of joy."

Every one comes to this beautiful month with a sensation of relief. To the citizen, pent up within brick walls, and driven with the cares of business, the Summer vacation is now in near prospect, when he may go forth to luxuriate in green meadows, to climb mountains and catch trout, to bathe in the surf and dream of sharks and man-eaters. He will soon bid adieu to blot- ters and ledgers, to omnibuses and cab-men, to croton-water and gas-light. He will taste the sweets of Nature in their unadulterated simplicity. He will seek the remotest haunts of rural life where people rise to meet the morning sun, and genuine starlight illumines all the streets. He will get away from this "everlasting whirl and bustle," read his morning papers, two days old, by the dim flare of a tallow candle, light himself to bed in the attic by the same, sleep in bounteous real goose feathers, and dream of purgatory. It will be—what all hearts crave—a change. He will leave behind many comforts, and many of the necessities of his artificial life in the city. But it is a mighty comfort to get away from comforts, sometimes; to miss your cup of Java, and be

treated to burnt peas and ship-bread, in due proportions; to miss your hair-stuffed mattress, and swelter upon feathers and cotton sheets unbleached.

That majestic swell of the organ that so fills our souls with the spirit of devotion upon the Sabbath, might become as harsh and ear-breaking as the notes of the Italian music grinder under our window, if it were kept up all the week. We get sick of dainties and crave something that is a little coarse and unsodden. The raw beef that was the rage among the ton in Paris, a while since, is only a natural outworking of this propensity. We do not always want beef "a la mode." We become disgusted with fixings, and cry out for food and raiment "*au naturel*." No mode at all is much better than all the accomplishments M. Soyer can throw around a dinner.

Hence the annual hegira of our city population, who can afford it, to the rural retreats, to the "Springs" and to the "Falls," to the mountains and to the surf, to the coasts of Labrador, and to the head waters of the Missouri.

June also brings its sensation of relief to the cultivator of the soil, but there is much less, of the spirit of the untamed colt in him of which the poet speaks. Hard work and cares have subdued its friskiness, and he does not attempt to clear a seven rail fence, from the mere love of jumping, quite so often as the man fresh from town. His reputation for agility is well established, and he has no need to kick up his heels to prove that he has as much bone and muscle as his neighbor.

But the lord of the soil has his solicitudes and ennui as well as the citizen. The Spring rains and the cold easterly winds try his patience beyond measure. It did seem as if he would never get a chance to sow his oats, or plant his corn. The sheep looked thin, and he was fearful that he should lose half his lambs to be hung as a necklace upon his apple trees.

But June brings relief to many of his solicitudes. The seeds are sown, and are actually up; though he can hardly tell how they came up, it has been so cold and backward. Was there ever a season when this wretched climate of ours was not backward, in April and May! These two months seem to have been born with an extra amount of breeching. Their main office seems to be to hold back the advancing year. But June is a fast month, a true type of Young America. It is a great satisfaction to the farmer who has been broken off from his planting half the days in the week, to have clear skies and full swing to work. The corn is actually up, and not more than one kernel in ten has failed to come. The oats look well, the wheat and rye are promising; and the lambs and colts, whatever may be said of their owner, are frisky enough to suit the taste of the wildest uncaged youth of the city.

The season is fast coming to a crisis, and the farmer can already tell pretty nearly what its char-

acter will be. The hay crop is already determined, and with a few extra showers it would be more than an average. The wheat and rye crop are also within the range of calculation, and he has estimated the yield per acre. The yield of his herds and flocks are already before his eyes, and he has only the corn and potato crop to worry about, and to remind him that he has not yet reached Paradise.

Now, if ever, the husbandman can enjoy his labors; he has not yet reached the harvest, but is full of hope in regard to it. The pleasures of anticipation are his. He looks for a little better harvest than he ever gathered, and everything pushes along so rapidly now, that it warrants almost any prophecy concerning its future. The earth is in its greatest luxuriance, the forest has donned its Summer drapery and the meadows are fragrant with the blossoming grasses. The breath of June roses comes up to him from every garden, and a sweeter breath from the flowers and young olive plants that cluster around his table.

But let him not be too easy in his pleasing anticipations. We are never more liable "to count the chickens before they are hatched" than at this season. The hoed crops now demand constant attention. Cultivation is the great work of June, and we never come so near to being disciples of Jethro Tull, as when we see the luxuriance that follows the constant use of the hoe and the cultivator. Whether you believe in pulverization or not, keep these implements moving, early and late. A farmer cannot spend this whole month more profitably than in stirring the soil among the cultivated crops.

Frequent cultivation will bring all the elements of Nature to your aid, and make the most of the manure that you have worked into your soil. Hoe a row of cabbage plants every other morning, and another row only once a month, and you will see a marked difference, though the soil, manure, and treatment, are, in every other respect, alike. If the soil be not frequently stirred, the surface becomes crusted over. The rains do not run into it so readily, and the roots lose a large part of the benefit of the dews. The air cannot circulate beneath this crust with freedom, and the decomposition of the manures in the soil cannot go on so rapidly. The plant cannot sustain its highest vigor and take up that carbonic acid that is ever floating in the atmosphere and enters into the food of all plants so largely. They absorb it into their systems, and while the carbon is retained, they throw off the oxygen, and thus purify the air. The atmosphere is also charged with moisture, which is condensed by the cooler temperature of the earth at night-fall, and descends upon the soil. If this be fine and loose by recent stirring the moisture is absorbed at once, and is appropriated by the roots of plants. Cultivation is to the crops after they are up, what action is to oratory, the first thing, the second thing, and the last thing. Therefore, cultivate—hoe! hoe!! hoe!!! HOE!!!!

Calendar of Operations for June 1858.

[We note down sundry kinds of work to be done during the month, not so much to afford instruction to practical men, as to call to mind the various operations to be attended to. A glance over a table like this will often suggest some piece of work that might otherwise be forgotten or neglected. Our remarks are more especially adapted to the latitudes of 35° to 45°; but will be equally applicable to points further North and South by making due allowance for each degree of latitude, that is, later for the North, earlier for the South.]

EXPLANATIONS.—*f* indicates the first; *m* the middle; and *l* the last of the month.—Doubling the letters thus: *ff* or *mm* or *ll*, gives particular emphasis to the period indicated.—Two letters placed together, as *fm* or *ml*, signifies that the work may be done in either or in both periods indicated; thus, work marked *fm* indicates that it is to be attended to from the first to the middle of the month.

FARM.

June is emphatically a growing month, both for vegetables and weeds. Plows, cultivators, horse and hand hoes will all be called into requisition now, to keep down weeds and loosen the soil about growing plants. Some late crops are yet to be put in and failures in the corn fields need replanting. No spot on the farm should lie waste. Plant or sow such spots with some soiling crop, put in buckwheat or turnips, anything rather than leave them idle to grow pestiferous weeds. We do not believe in the idea that soils need rest. A good coating of manure, deep plowing, and clean tillage are the best "rests" that exhausted lands can have.

Towards the latter part of the month the ringing of the scythe and the clatter of the mowing machine will be heard in the meadows, and hay-making will be the order of the day.

Barley may still be sown, *ff*, if omitted till now.

Beans—Plant, *ff*, any not already in, among corn or by themselves.

Bees send out most of their swarms in June. Watch them closely and have hives in readiness to place over them as soon as they settle in clusters. See *Apiary and Wonders of the Bee-Hive*, in the present number; also on "Clustering Bees."

Beets—Sow Sugar and Mangel-wurtzel, *ff*, for stock, unless all were put in last month.

Buckwheat—Sow, *ll*, or even first of July, that it may fill its kernels in the cool weather of Autumn.

Cabbages—Plow and hoe early ones, *ff*, *m*. Plant, *m*, *l*, among early potatoes and elsewhere for late use. Use tobacco dust, lime and ashes sprinkled over the plants to keep away insects.

Carrots—Hoe and thin early. Much after labor may be saved and a better crop secured by taking the carrot, turnip, and beet patch in hand before weeds get a start. Thin out liberally. Four to six inches apart in the row is near enough for carrots.

Corn—Replant, *ff*, where insects, crows or blackbirds have taken the seed. General planting may also be done now. Very good corn was raised last year from grounds planted as late as the 10th of June. Put in a good supply for Summer feeding of cattle. Plant at intervals of two weeks, *ff*, *m*, and *l*. Plow and hoe former plantings.

Fences—Do not tempt cattle with poor ones.

Grain Fields—Select a seed patch and go over it, *f*, *m*, removing cockle and other foul stuff.

Grass—Some fields will need cutting, *m*, *ll*, according to latitude. Begin early, especially if the weather is fine and you have no mowing machine. Have a quantity of hay caps in readiness for wet weather, and all of your tools and wagons or carts in order.

Hoes should be kept bright by constant use during most of this month. Get the most improved horse hoe and make horses do the work of many men. Push the hoeing, and weeding so as to be in readiness for hay and grain, now rapidly coming forward.

Manures—Dig out a portion of the muck swamp before haying, and have it dry for Fall use. Mix lime or ashes with the muck if convenient. Keep cattle yards covered with muck or loam and scrape up the fresh droppings each morning and mix with compost materials under cover.

Millet—Sow, *ff*, *m*, for soiling, and as a grass crop.

Onions—Hoe, weed, and thin early before the weeds get a start. Much after labor will thus be saved.

Pastures. See article on another page.

Peas—Sow late crops, *ff*, previously scalding to destroy bugs unless they have left the seed.

Potatoes—Keep free from weeds but do not use the plow among them after they commence blooming.

Poultry require little attention if running at large, save feeding a little grain and collecting eggs. Where it is necessary to confine them in buildings or yards it is always well to let them out for a short time about sundown. Keep roosts dusted with plaster, charcoal or muck, scraping up and barreling the contents frequently for guano. See article.

Pumpkins may yet be planted, *ff*, either among corn and potatoes or by themselves. We have raised splendid

crops, by sticking the seeds with the thumb and finger, over the corn field after a second hoeing even.

Sheep were probably washed and perhaps sheared last month. If not wash, *ff*, and shear in about ten days afterward.

Sorghum—Drill in a quantity, *f*, *m*, for soiling purposes. Stock of all Kinds—Seek to improve by saving the best calves, lambs, pigs, &c. Why not keep and raise cows that will give 24 quarts of milk per day and command \$75 to \$80 or even \$100, any day rather than beat the same cost of keeping those which give 8 to 12, or 15 quarts of inferior milk per day, and which will scarcely bring \$30 in market.

Swine—Where there is an orchard or small pasture accessible, hogs may properly have the range of it, but by all means keep them from the highways and dooryards. If shut up, give them weeds, turf, and other green stuff daily, keeping their pens and yards well supplied with manure absorbers.

Tanners' Bark—In hemlock and oak localities bark may be peeled, *m*, *ll*.

Tools for hay and grain cutting, should all be procured and put in working order, *ff*, *m*. With a large quantity of hay and grain to cut, a mowing machine will doubtless pay, besides securing it in better order.

Turnips—Sow, *ll*, or in next month. Read articles. Weeds—Keep them down while small, if you would save heavy labor afterwards, and secure good crops.

ORCHARD AND NURSERY.

If properly cared for last month, the orchard needs little attention now, other than destroying insects, pinching in, and Summer pruning. Weeds and grass should also be kept from growing about the trunks, and fruit thinned out where it has set too thickly.

Hoeing will be the chief business in the nursery, assisted by the plow or horse cultivator.

Budding may be performed, *ll*, in some cases of early growth, particularly on plums, pears, and roses.

Budded Trees—Remove suckers, and tie up buds inserted last year. Where buds have become well established, and the new shoot is growing in an upright position, old stocks may be rounded off, *ll*.

Caterpillars—Destroy, *ff*, *mm*, any suffered to live till now.

Evergreens may still be transplanted with care, *ff*, watering and mulching.

Grafts—Examine and loosen any bandages cutting into newly grafted trees. Replace cement or grafting wax where it has peeled off. Rub off suckers.

Hoe nursery rows often, using the plow and horse hoe to lessen the labor.

Inarching—Commence, *m*, *l*.

Insects—Vague incessant war upon the insect tribe, now that the gun of the sportsman has destroyed or driven away your most efficient aids in the business, the small birds. Caterpillars, apple, and cherry worms, borers, &c., all want looking after. Those who wish to have abundance of good fruit must be at some expense in obtaining it. See articles in present number, illustrating pear, and cherry slugs.

Layer, *ll*, new growth of deciduous and evergreen trees.

Mulch, *ff*, newly planted trees, especially if the weather be dry.

Peach Trees—Cut back or pinch in this year's growth. The peach is largely benefitted by this heading back.

Pear and Plum Stocks—Budding may be commenced, *ll*, on those stocks which give indications of completing their growth early.

Plums—Cut away all appearances of black warts. Destroy the curculio by suspending a lantern among the branches at night with a dish of soap-suds underneath, by jarring the tree and catching the insects as they fall upon sheets, placing chicken coops under the trees, &c.

Shade tender seedlings of evergreens, magnolias, holly, &c., from the mid-day sun.

Stake newly planted trees unless they are so well furnished with low branches and a stalky trunk, as not to require it. We much prefer trees that do not need staking.

Summer Pinching, or Heading Back—Perform, *m*, *l*, especially upon peach and pear trees, to check a lengthy growth and form fruit spurs. See page 116 of the *April Agriculturist*.

Thinning Fruit—This should be done, *m*, *l*, upon trees which are heavily loaded. Better have a less quantity of really fine fruit, than a large amount of a small size and poorly ripened.

Water evergreens and other newly planted trees needing it, if the month proves dry.

Weeds—Keep down, both in nursery and about orchard trees.

KITCHEN AND FRUIT GARDEN.

With planting and transplanting late vegetables, thinning, hoeing and weeding early ones, harvesting strawberries and early cherries, the gardener will find very little idle time in June. Everything is now growing rapidly,

and if weeds are not kept down at this season they greatly increase after labors, and diminish the prospect of a good cultivated crop. The first plantings of radishes, lettuce, spinach &c., are now ready for use or for marketing, while rhubarb and asparagus continue to yield a full supply. These, added to the early bed of strawberries and the plentiful yield of "greens" allow the market gardener to frequently send away for sale a load of his productions, and thus begin to reap the rewards of his toil. Crops were, or should have been so arranged that he may now send a load of something to market every few days until far into the Winter, or Spring even.

Asparagus—Keep beds well stirred and free from weeds. Cutting should be omitted by the middle or latter part of June.

Beans—Early Kidneys, and Limas even, may still be planted, *ff*, *m*. See that runners are poled.

Beets—Sow the remaining Summer crop, *ff*, and, *m*, *l*, for Autumn and Winter use. Hoe, weed and thin early beds, using the young plants for "greens," for which they are excellent, "roots and all."

Blackberries—Stake up, *ff*, if not previously done. It is better to stake both these and raspberries before the new foliage comes out. Hoe carefully, to preserve the new shoots for a future crop.

Borecole, Brussels, Sprouts, Broccoli, Kale &c—Plant out for late crops, *f*, *m*.

Cabbage—Plant out, *f*, *m*, for Autumn use, and *ll*, for Winter. Examine former plantings and replace failures. Hoe early ones often. Search out and destroy cut-worms. Capsicum—Plant out, *ff*, *m*.

Carrots may still be sown, *ff*, *m*. Earlier sowing is preferable, however. Hoe and thin those put in last month. On no account leave the patch until weeds hide all the carrots before putting hoes and weeder into it.

Cauliflowers—Plant and treat as cabbages. Early ones will soon be forming heads. Bend some of the leaves over to shade the heads from the sun.

Celery—Set plants for a general crop in trenches, *m*, *l*, watering and shading for a few days.

Corn—To keep up a good succession, plant sweet varieties, *f*, *m*, *l*, at intervals of ten or twelve days.

Cress—Sow, *f*, *m*, *l*, for a constant supply.

Cucumbers—Plant, *ff*, *m*, and even, *l*, for pickles. See the article on another page. "To repel Bugs from vines."

Egg Plants—Set out, *ff*, for full crop, and, *m*, *l*, for late plants.

Fruit—Collect any now ripening, and thin overbearing trees or bushes.

Gooseberries—Keep well hoed, or better, mulch with salt hay, tan bark or saw-dust, which will prevent weeds from growing and keep the ground moist.

Grapes—Rub off superfluous shoots and pinch back bearing branches. Destroy caterpillars and other insects beginning to prey upon the vines.

Herbs—Cut and dry as fast as they come into full flower. Hoeing is the important operation for June, and needs following up closely. It is almost rain and manure for the garden.

Insects—Allow them no peace in the vegetable or fruit garden. They have increased largely of late years and require persevering efforts to combat them. Bugs, borers, caterpillars, slugs, curculios, &c., all want looking after and meeting on their own ground. Read articles on pear and cherry slugs, currant bush borers, and on Repelling Bugs from vines on pages 179, 180 and 182.

Lettuce—Sow and plant out at intervals of a week, during the month.

Melons—Plant, *ff*, both Water and Nutmeg varieties.

Okra—Plant, *ff*.

Onions—Hoe, weed and thin, *ff*, *m*.

Parsneps—Weed and thin, *f*, *m*. Do not leave them too crowded.

Peas—Sow the best varieties you can get, *f*, *m*, *l*, at intervals of about ten days to keep up a constant supply. Bush when a few inches high.

Potatoes—Hoe and weed thoroughly. Plant late cabbages among early potatoes to occupy the ground after they are dug.

Radishes—Sow as lettuce, among and between other vegetables, *ff*, *m*.

Raspberries—If not already done, tie to stakes, *ff*, *m*. See illustration and article on page 182.

Rhubarb is now yielding a full supply, and the Linnaeus and Victoria varieties may be pulled during the entire month. The Linnaeus variety continued good and was used by us last year up to the middle of September.

Spinach—Sow often, as lettuce. Early crops may now be cleared off and the ground appropriated to something else.

Squashes—Plant, *ff*, *m*. Protect from bugs as Cucumbers. See page 182.

Strawberries—Clean beds and straw or mulch with saw-dust, or tan-bark, *ff*. They will soon be in full bearing.

Thinning out both vegetables and fruit should be attended to early. Plants are usually left too crowded.

Tomatoes—Plant out, ff, m. Hoe and bush or stake early ones.

Transplanting—Perform, ff, m, selecting cloudy or wet weather, or water and shade after the operation. Remove with the plants as much unbroken earth, and undisturbed root fibers as possible.

Turnips—Sow flat and early varieties, f, m, l, to keep up a succession. Sow rutabagas, &c., ll, for Autumn and Winter use. For White French Turnip, see page 134 May number.

Water plants recently set out, strawberry beds, if not ripening fruit, fruit trees, &c., if the month proves dry. From the wet state of the ground now, it does not appear that much watering would be necessary.

Weeds—Pull, hoe and root out with plow and cultivator. Give them no room in the vegetable garden—not one of them.

Winter Cherry (Physalis)—Set out plants, ff, m, treating as tomatoes. See page 149 May number. Plants nearer than one foot, transplant to new ground. Make the most of them, for you will want an abundance of fruit in Autumn and seed for yourself and neighbors next year.

FLOWER GARDEN AND LAWN.

At this, the blooming season, the Flower Garden is expected to make a fine show of a large number of the perennial and biennial plants. Most of the Green-House, and many of the Hot-House plants have been transferred to the open border and with their rich colors lend attractiveness to the grounds.

Annals—Many of the quick growing varieties, such as Asters, Balsams, Mignonette, Larkspur, &c., may still be sown, ff, m.

Bedding Plants—Complete putting-out, ff, using verbenas, geraniums, petunias, pansies, daisies, &c.

Box Edging—Plant still, selecting a moist day, or watering and shading. Cuttings may also be made, f, m. Shear old box, selecting damp weather if possible, for the operation.

Bulbs are mainly out of bloom and those which are to be reset may be lifted and dried, m, l. If the bed was made last Fall they need not be changed this year.

Carnations, Pinks and Picotees—Shade the choice ones in bloom to prolong the season of flowering. Layer and pipe (make cuttings), m, l.

Climbers—Regulate, or train upon lattice work and trellises, f, m.

Dahlias—Plant out, ff, m, watering if needful. Stake up early shoots.

Evergreens may still be planted upon the lawn and in the borders, ff, m, watering and mulching. In exposed situations they may need confining to stakes to prevent their being swayed by the wind.

Flower Stalks—Cut away as fast as they are out of bloom. They have an unsightly appearance when left in the flower border.

Geraniums—Plant out, ff, m, either singly or in masses. **Gladiolus**—Plant, ff, m. Stake, ll, those put out last month.

Grass Edging or Borders—Shear every few weeks leaving them smooth and even.

Gravel Walks—Keep free from grass, and weeds, raking and rolling frequently.

Hedges—Clip, m, l, rapid growing deciduous hedges. Hoe often among and around plants to loosen the soil and induce moisture, as well as to keep down weeds.

House Plants—Bring out remaining ones intended for the open air and plant in borders, or arrange in a sheltered situation leaving them in pots. Water often.

Insects—Destroy Rose Slug as directed on page 149 of May *Agriculturist*. The same remedy will apply to the leaf hoppers (*Tettigonia Rosea*). Caterpillars, green fly, rose bugs, &c., all need looking after.

Lawn—Mow and rake every two or three weeks. Keep grass from growing about the trunks of newly planted trees.

Oranges, Lemons, Oleanders and Myrtles—Plant out in the open borders, ff, m, or place out in their tubs.

Potted Plants will need frequent waterings unless turned out into the border. Shield from high winds.

Roses will be in the height of bloom during this month, and show themselves in their true position of "queens of the flowers." The amateur has a just pride in his rich collection, showing a profusion of attractive colors and appealing equally strong to another sense by their sweet odors. See illustration and article on page 184. Read under insects above.

Stake flowers and shrubs requiring it.

Transplant, m, l, annuals sown last month, retaining earth about the roots if possible. Water and shade, unless a damp day is chosen.

Verbenas—Plant out, ff, m, singly, and in masses. They are a choice flowering plant, being in bloom most of the season. Set out a good supply of a variety of colors.

Water plants retained in pots often, especially during dry weather. Evergreen and other shrubbery, with transplanted annuals require water unless it rains frequently.

Weeds—Keep down, ff, mm, ll.

GREEN AND HOT HOUSE.

So many of the plants usually kept in these houses are now in the open air that we have included the care of the two in one calendar, neither requiring fire heat any longer. In extensive collections, the more tender plants are better managed in than out of the house, and on that account are still kept upon the shelves. They now require abundance of air and plenty of water. The upper ventilators should be kept open during fair weather. Opening both upper and lower would dry the atmosphere too rapidly. Measures should now be taken to increase the stock of Winter blooming plants; and many of the seedlings and cuttings, will need repotting. In carrying out and arranging pots in the open air, place them in a neat orderly manner, convenient of access. The situation should be so sheltered that the plants will not be blown about by high winds.

Azalias are now making a rapid growth and need abundance of water, and some pinching in.

Bud, m, l, oranges, lemons, citrons, shadocks, &c.

Camellias do quite as well in the open border, to which they may be carried, ff. If retained on the shelves in the house, water and syringe often. Watch for and check the approach of insects.

Cuttings of Chrysanthemums, myrtles, hydrangeas, fuchsias, geraniums, &c., may be made and potted, f, m.

Fuchsias—Repot to make fine specimens for Winter blooming.

Geraniums are in full flower and require liberal waterings. Increase the stock by cuttings and layers.

German Stocks—Plant in borders, ff, m.

Grapes—The early houses will now be ripening their fruit and the syringings overhead must be omitted. Some of the later crops need a further thinning. They all want abundance of air with a free circulation.

Insects are particularly troublesome at this season and require much care to forestall their depredations. Keep them in check now, unless you wish to be overrun with them in Autumn.

Layer and Inarch woody and other plants which do not root readily from cuttings.

Pines require abundance of air and less water as the fruit approaches its ripe state.

Potting—Continue, f, m, l, and provide a supply of prepared earth for extensive use next month.

Roses—Plant in borders, ff, m, any remaining in the houses. Syringe with oil soap to destroy slugs.

Seedlings—Transplant, ff, m, to borders or pots as after culture renders necessary.

Verbenas—Get up a stock for Winter blooming by layering, inserting cuttings, &c.

Water—Give as is needful. With small pots in a dry atmosphere, a little may be necessary both night and morning. Examine pots after heavy rains to see if the drainage is perfect.

THE APIARY IN JUNE.

BY M. QUINBY.

Any stock of bees failing to increase in number as it should, ought to be examined now for the cause. The most common difficulties are: Diseased brood, and want of queen. While examining the stock for worms, the presence of a queen can always be determined. There will usually be a few, and sometimes many immature bees found on the floor of the hive in the morning. One or more indicates her presence. When this is the case, some other cause for this thriftless state of things must be sought for. A thorough examination of the common hive can be effected only by the aid of smoke. Blow some under the hive, then turn it bottom up to admit light among the combs more smoke will drive the bees away from the brood. Pick the sealing off from some of the cells that appear the oldest—if any bees are of a dark color while they are in the larva state, the stock is diseased, and the bees should be at once transferred to a new hive, and the honey, if any, kept from the bees as much as possible. If there is no brood, there is probably no queen. If there are bees enough to protect the comb from worms a queen may be provided from some of the swarming hives. *Without bees to assist there is no possibility of saving the contents of a hive from the moth.* Empty combs are attacked very quickly in warm weather, after the bees are gone, or very much reduced. Whatever is saved must be secured in advance of them.

Whenever the bees of old stocks or new swarms are crowded outside during the yield of honey, whether before or after swarming, they should be furnished with surplus boxes without delay, which may be removed as fast as filled, and empty ones put in their places. No second or after swarms need be expected from a stock later than 18 days after the first—watching for them longer is unnecessary. A part of the stocks that stand close together, will lose their queens from fourteen to twenty days after the first swarm. It is indicated by the commotion of the bees the next morning after the loss. They should then

receive a queen or queen cell from some other hive. A spare queen may be often obtained from an after swarm. A queen cell may usually be procured from a stock that has cast its first swarm within a week. To get the bees out of the way, operate as above with smoke—with a knife cut out, without bruising a cell, (for description, see fig. 9, page 41 of this volume—Feb. No.) and introduce it into the stock in its natural position. This is often the only means of saving the stock.

Continue the warfare with the moth-worm. Protect the hive from the sun in very hot weather.

Summer Fallows.

This branch of farm operations has antiquity in its favor. The Romans practiced it for a long period in their history, and in all parts of their dominions. The practice originated, probably, in the idea that land after several years' use, required absolute rest; and that it would thereby recruit its energies. Experience, too, doubtless showed that it was more productive after this season of rest; and hence it was supposed that the advantage was derived from the mere cessation of raising crops, and not—as the fact was and is—chiefly from the decay of vegetable matter growing wild upon it and from the absorption of nutritive gases from the atmosphere.

British husbandry makes great account of fallows. It practices "naked fallows" and "green fallows." Naked fallows means the plowing and cleaning of the land for one Summer without taking any crop from it. Green fallows means the growing of hoed crops on soil usually devoted to some kind of grain. The object of the latter is to clean the land, by hand and horse cultivation, and to bring it into fine tilth. In England, stiff soils and those which have become infested with weeds are most commonly treated to fallow. The land is thrown up into ridges in the Fall, so as to shed water quickly, and to get the benefit of the Winter frosts. In the Spring, it is cross-plowed, and during the Summer it is worked over as often as needful, to pulverize it well and eradicate all weeds. When the land has become full of couch grass, they practice "paring and burning." They have an implement called a breast-plow, with which they take off a few inches of the surface and throw it into heaps. This, on becoming dry, is mixed with rubbish and then burned or charred and afterwards scattered over the soil. This keeps the grass very much in check, and furnishes a rich top-dressing for the land. If the grass continues troublesome, the ground is broken up again and a "grubber" put into it, which brings the roots to the surface, from which they are then raked off and burned. This thorough work prepares the land for any crop.

In some of our Southern States, we see that the old Roman mode of Summer fallowing is still in vogue. Large fields we have observed, grown over with mulleins, thistles, and various other rank weeds, and scattering their seeds far and wide. Now, is not this land nearly as much exhausted by growing these immense crops of weeds, as it would have been, under good management, in growing regular crops? Consider, too, the injury sustained by allowing the soil to become so infested with weeds.

The common practice throughout the Northern Middle States is better, though even this may, perhaps, be improved upon a little. Many farmers plow their grass lands intended for wheat, in May or June, and let them lie until September, when they cross-plow, harrow and sow their grain. This course is generally pursued, without reference to the nature of the sod turned under. But is not this second plowing objectionable? Whatever gases are evolved by the decomposition of the grass should be left undisturbed, so as to fur

nish food for the young wheat; whereas, by this second plowing, they are brought to the surface and dissipated in the air. Then, again, all the roots of the grass are not killed in so short a time, and this second plowing lays them back in their original position, and they begin to grow again, very much to the injury of the wheat. Would it not be far better to use a set of light "gang-plows," which break up the surface sufficiently, without disturbing the inverted sod?

Again: might we not more generally adopt the English system of green fallows, so far as to take off some such crop as peas or beans, whose broad leaves, drawing most of their food from the air, would not exhaust the soil, and yet the cultivation of which would tend to clear the land of weeds and to bring it into fine tilth? Clover land, instead of being devoted to the usual Summer fallow, might be allowed to remain unplowed until nearly the time of sowing wheat. The sod then turned under, would afford a rich repast for the growing wheat. Sandy or loamy soils and those not infested with weeds, may often be treated in this way to great advantage.

Getting Rid of Rocks.

AN AMUSING EXAMPLE.

In our primary soils, where large rocks are imbedded firmly in the soil, and lie thickly on the ground, they are a great incumbrance to the cultivation of the land, and if to be got out of the way, are a great expense in their removal. Many of them are worked into stone fences, but as better stones for such purposes usually abound on the same premises, these huge rocks are little less than a nuisance, to be got rid of in some way—and that usually by blasting, picking up, and carrying away altogether, when they can be devoted to no useful purpose.

There is another way of getting rid of them, which we can best illustrate by a case in point. Some years ago a wealthy townsman bought a country-place, a rude farm, rather, having good capabilities for a fine residence, a few miles out of town, and went to work to improve it. In laying out his building grounds, a huge granite rock, of several feet in circumference, lay deeply imbedded in the light yellow loam where he purposed to have his lawn. That rock he must have out of the way, and as he had no tools to blast it with, he set to work with his half dozen laborers, and two or three yoke of oxen, to remove it. The owner "bossed" the work himself; but as he knew much more about merchandise than moving rocks, the work went on but badly. He ordered levers and handspikes; the laborers shoveled a hole on one side, to get the levers under the rock; they dug holes on the other side; and they dug holes on all sides; the chains were wrapped around it, and hooked, and the cattle whipped up and bawled at by the teamster, all to no purpose. The chains broke, the workmen gabbled, the teamster scolded, and the "boss" fumed and fretted. It was no go, decidedly, after toiling at the rock half a day. There it lay, heavy, sullen, immovable.

As they were about leaving for dinner, a lank, lounging Yankee came traveling along, with a stick over his shoulder, and a bundle tied in a cotton pocket handkerchief hanging on the end of it. Hearing the "muss" over in the field, he turned from the highway to the fence near where the men were at work, and took a look to see what they were about. The men had now scattered, leaving the owner of the premises still at the rock, where he quietly stood, apparently musing on the ill success of his morning's labor. Singing out to

him, our Yankee exclaimed; "Say, neighbor, what ye dewin' on?"

Feeling exceedingly nettled, yet still willing to receive comfort from almost any quarter, he muttered, half angrily, yet somewhat coaxingly: "I've been working here all day with a lot of stupid fellows, and a couple of teams, to get out this rock, and here it lies just as fast as ever, and I believe I shall have to abandon it after all."

"Dew tell! I never!" said the Yankee, climbing over the fence, and approaching the proprietor—where he carefully laid down his bundle, containing probably the most of his spare wearing gear—"and what dew ye want to dew with it?"

"Nothing in the world but get it out of sight, some-way-or-other, so that I shall never see it again."

"Sartin? Never want to see the rock agin, so?"

"Yes, out of sight; that's all I care for."

"And heow much'll ye give, to put the pesky thing where ye wont see it agin—never?"

"Why, I've fooled away five dollars on it already; and I'll give five more to any one who'll do the job."

"Sartin?"

"Yes; sartin!"

"Well, throw in my dinner, for I'm plaguety hungry, and keep them pesky fellows out of the lot, and give me a good shovel and I'll dew it for ye this artemnoon."

The bargain was struck, the Yankee given his dinner, and about one o'clock, p.m., he was seen, coat off and sleeves rolled up, of a pleasant day in the month of April, shovelling away like "all-possessed," in sinking a huge hole on one side, and partly under the rock aforesaid. The owner, of course, was not far away, directing his men about other labor which they prosecuted with more apparent success than at their morning's work. Long before sundown our Yankee sung out to his employer, and beckoned with his hand to come to the spot. He was there in a moment, and found a huge hole which would furnish a cellar for a moderate sized building.

"Say, mister; yew jest take hold o' that e'end of this 'ere pry, and bring it round here, while I throw round t'other e'end, so's to give the rock a jintle tarve, and I guess we'll fetch it."

So the "boss" now playing the workman, did as he was bidden, and the lever was laid so that when the Yankee had thrown out a few shovels full more of earth the stone was nicely balanced upon it, and a stout lift would throw it directly into the pit.

"But don't we want some help! Stay a minute, and I'll call my men to help you."

"Not a single head on 'em 'thout yew want 'em buried in that pit—the best possible use such an idolatrous set o' critters can be put tew! We'll do it ourselves."

So saying, our Yankee just eased the further end of his lever, while by his direction his employer, with a hand-spike on the other side of the rock, gave it a gentle lift, and over went the enormous boulder into the pit, with its upper side laying full two feet below the surface of the adjoining ground. Seizing again the shovel, before the sun was fairly set, the stone was covered in, and the surface leveled. Our Yankee rolled down his shirt sleeves, put on his coat, and gravely turned to his employer, remarked:

"Neow, Squire, that 'ere five dollars, if you're willin'! Fair bargain, ain't it? You'll never see that 'ere stone agin, 'nless you dig for it."

"Certainly, here's your money; and if I had to pay you twenty it would be knowledge cheaply gained. I shall know what to do with the rocks on this place hereafter."

"Not with them pesky bog-trotters about ye! I guess this artemnoon's work 'll set me on about another hundred mile to'rd the West, and I'll be joggin'." So, good night, Squire."

And away trudged our hero toward the far West, and to competence, leaving our newly instructed farmer to vex and fret himself with his workmen as occasion might offer.

Sinking is the best method to dispose of moveable rocks when not wanted for other purposes. We have, indeed, seen stone wall inclosures six feet thick at bottom, two feet at top, and six feet high—for no other purpose, apparently, than to get rid of the stones which lay imbedded, or loose about the fields. Land of course must be valuable at the extravagant cost as the removal of such quantities of stones require, and it can only be done in the vicinity of a dense population where agricultural products are in demand at high prices. Our whole sea coast for many miles back, north and east of New-York, with few exceptions, presents a rock-bound surface; yet the soil is usually warm, dry, and productive, when once cleared, and with good cultivation will yield remunerating crops. Our seaboard, too, along that territory is populous, and remarkably available for commercial and manufacturing purposes; and the time is not far distant when almost every desirable position will be brought under cultivation, and devoted either to the residences of wealthy people in retirement, or to the current agricultural demands of the populous towns and cities lying on the bays and rivers, and railways.

Within our own recollection, sterile, rock-bound farms, which were considered comparatively worthless, are now converted into productive and beautiful estates, paying remunerating interest on their cost; and so it will be with thousands of others, as in England; population, wealth, and luxury availing itself of everything near at hand which can, by a fair expenditure of money, be made serviceable to the enjoyment, the comfort, or the pleasure of human-kind.

Small Stones in Ditches.

To the Editor of the American Agriculturist:

Some agricultural writers recommend filling drains with small stones without any water-duct beneath. I have seen practical farmers following these directions. To satisfy myself of the utility of this practice I filled up the end of an open drain the past Winter with small stones raked from gravel that had been spread upon a meadow. They were from the size of a hen's egg to that of a man's fist, and were raked quite clean. According to the theory, they ought to pass water readily. About a rod was thus filled in. I have carefully observed the condition of the water above and below the stones, immediately after heavy rains, and at times when no rain has fallen for several days. The water is from three to six inches higher above than below the stones; showing that a drain thus filled must always keep the water line several inches nearer the surface than it would be with a free duct.

Of course if the drain had been filled the whole length, instead of a rod near the mouth, the case would have been much worse. The passage of the water is hindered by its friction against the surfaces of so many stones, and by the filtration of dirt from the sides of the ditch.

I am persuaded from this experiment, that it always pays to make a duct of some kind at the bottom of a drain. The labor is but a little increased, for after the channel is covered with flat stones, the small stones may be tipped from the

cart directly into the ditch. With a passage-way beneath, the small stones perform an excellent office in making a larger passage for the water in time of heavy rains, and in furnishing the roots of plants with air and moisture in dry times. If the filling in with small stones retains the water in only three inches of the soil, at the bottom of the drain, the farmer loses a part of his labor. There is so much dead, inert sub-soil over the whole area of his field that would be available if the drainage were properly performed. I would advise to use small stones only over drains and not in them.

Connecticut.

The Mowing Machine Discussion.

A BIT OF A CHALLENGE.

To the Editor of the American Agriculturist.

Being a subscriber to the *American Agriculturist* (through the Chester County Agricultural Society) I see communications in the Feb. and March numbers over the signature of "H. L." who appears to be very much interested in some particular mowing machine other than the *Price Mower*, and its half-brother. Why does he not come right out and let us know who he is? I will just inform him that I have both the *Price Machine* and its half-brother, and if he thinks he has a machine that will beat either, in any respect, all he has to do is to come to Chester Co. near West Chester, and I will be ready to give him a trial, in any kind of grass—and let the farmers be the judges; we have some of the tall grass in Chester Co.—and heavy too. I will mow with him in lodged clover as well as in straight Timothy.

EDGE T. COPE.

East Bradford, Chester Co., Pa.

[If H. L., or any other correspondent, prefers to discuss the merits of a public trial without proclaiming their own personality, there can be no objection to the course. It certainly argues well for the fairness of H. L.'s criticisms that neither Mr. Cope nor any one else, so far as we have heard, is able to judge from his articles what machine he is interested in—if he be interested in any one. In order that what he might say should appear in connection with Mr. Cope's letter we forwarded him a proof of the above, and received what follows. —Ed.]

To the Editor of the American Agriculturist.

In reply to Mr. Cope's proposition, I will briefly say, that as announced in my articles, I am an amateur in this matter, and cannot personally enter the lists, but I will, with great pleasure, find a friend to meet Mr. Cope on the following conditions:

1. At any nearly half-way ground he may choose between my residence and his; or, if more convenient to him, in the immediate vicinity of Albany or New-York cities. Such place to have wet meadow (fresh or salt) as well as dry, with pure clover growing on some of them, and mixed grasses on others, so as to be able to give the machines a fair test. I to have two weeks notice through yourself, and the trial to come off during the month of July.

2. He to select five acres of different kinds of grass and on different kinds of ground, and my friend to do the same; and these different lots to be divided as equally as possible between them for the performance of the respective machines.

3. Whichever machine is judged to do its work best—with the greatest ease to the team and driver, with the least injury and wear to the machine, with the fewest stoppages and least extra-neous assistance—to be declared the victor.

4. The time allotted for cutting the grass to be at the rate of one-hour-and-a-quarter per acre.

5. Each party to bring two judges with him, and if they cannot agree, they shall then select a fifth from among the spectators of the trial to act as umpire.

6. Whichever party is beaten, to pay all his own expenses and those of the victorious party—the same not to be over \$300. The latter sum to be deposited with yourself in advance, to be forfeited to one party in case the other should infringe on any one or more of these conditions.

7. My friend will select one of the following machines which received no prize at the Syracuse Trial; viz., Ketchums, Allen's or Burrall's, as he may think proper.

H. L.

Syracuse, May 19th, 1858.

Do Potatoes mix in the Hill?

One would suppose that this question had been settled long ago; yet it continues to be asked. We repeat, therefore, that they do not and cannot mix in the hill. Why not? Because it is an invariable law of nature that one variety cannot be crossed with another except through the flower and fruit. All plants of the same family can be hybridized with each other, if they blossom at the same time. This crossing often takes place naturally, i. e., without the use of any artificial means. The wind often blows the pollen from the stamens of one plant-flower upon the pistils of another, and an intermixture ensues. This is also done by bees and insects, and it may be done by the hand of man. Potatoes can be "mixed" in this way. But remember that the mixing does not take place between the tubers under ground, but in the blossoms and subsequent seed balls on the top of the plant. Plant two kinds of potatoes in adjoining rows, and if they blossom at the same time, the pollen of one flower will undoubtedly be carried to the pistils of another. In the fall, save the seedballs and plant them and your potatoes will be a "mixed" variety. But if you continue to plant the tuber (the potato itself,) you will get no change of variety.

It is in this way that corn, melons, cucumbers and squashes become mixed with other varieties. The hybridization goes on through the flowers, and appears in the seed, and not in the root.

Potato Experiments with Sundry Fertilizers.

John Perene, of Montville Ct. sends an account of five experiments last season in which he planted the "Silver Lake, or Mercer potatoes" on five plots of ground, 24 feet square, manuring in the hill with different fertilizers—6 lbs. of the several manures to each plot.

No. 1 with Coe's superphosphate yielded	49 lbs.
2 with De Burg's.....	37 "
3 with Peruvian Guano.....	29 "
4 with broken bones.....	23 "
5 with no manure.....	20 "

The vines in No. 3 were green after the others were dead, and previous to digging he had decided in favor of the guano, but was disappointed at the final result. Such experiments are seldom satisfactory, at least until they are continued through a number of years. The very next season, on another soil, the results are likely to differ materially. The manures manufactured under the same name are seldom uniform in successive years. The guano may have been too much condensed in the hill. The bones, if merely broken, would produce very little effect, while if finely

ground they would perhaps have excelled all the other manures. Coe's superphosphate when made of dissolved unburned bones, was doubtless good, and for aught we know it may yet be made thus. A succession of experiments like the above would, in the course of years, impart valuable information—if the manures should continue uniform.

Root Crops for Stock—The positive Side.

To the Editor of the American Agriculturist:

Your correspondent, L. F. A., is quite certain that roots will not do for stock. If I had a four year old steer that would consume eight bushels of roots in one day, or even four bushels, I would drive him off my farm, as not worth keeping. Mr. L. F. A., says he was determined to give his animal a fair trial. I think he did try him at swallowing, but not as to flesh and fallow.

This story puts me in mind of a four year old Durham bull I once knew, that ate a barrel of Indian meal in one night. The owner thought him lost, but by running him in the street he got clear of the meal after a while. I presume Mr. L. F. A., had to do the same with his steer to save his life. The barrel of meal did the bull no good, nor would the eight bushels of roots do the steer any good.

Flesh and fat are what we want to make good beef, which takes time to put on. Among several others I may note one yoke of oxen which I put to stall feed, and noted particularly how I fed them, and how much. I commenced in October, after they had worked on the farm all Summer, and kept them up three months. I gave them one bushel of rutabaga turnips each, daily, about one peck of oats in the straw, each, and as much good hay as they would eat. I gave them some potatoes to slightly scour them, and no water. I put five inches in girth on them, and the beef was covered with fat and well mixed.

Large quantities of roots should not be given to stock at a time. The weather and size of the cattle should also be taken into account. It is better to feed them in warm weather and during the warm part of the day. I think 1½ bushels of roots is as much as should be given to a seven feet girth ox, with a few potatoes if he don't scour enough, and 1½ peck of oats, or half the quantity of Indian meal. I know but little about theory in agriculture, but claim to know experimentally and practically, about farming in our section.

U. D. WITHERSPOON.

Butler Island, Me., April 23, 1858.

"Poke Root" for Garget in Cows.

To the Editor of the American Agriculturist:

I saw in the May number of the *Agriculturist*, a request from J. & K., of Mason Co., Ill., for a remedy for what you, I think justly, called garget in the udder of his cow. I had a cow affected like his for some length of time, until I read in an agricultural work that garget or poke root, (*Phytolacca decandra*), put in the dewlap, the same as a rowel, would effect a cure. We accordingly tried it about one year ago, and found immediate relief. We made an incision in one side of the dewlap a little forward of the breast bone, sufficiently large to put in a piece of root of the size of a man's finger, and half as long, then inserted a couple of stitches and in a short time the dewlap commenced to swell, and the swelling in the udder began to subside. Since that time we have had no trouble with her. I. G. D. B.

Coxsackie, N. Y., May 12, 1858.

Hen-Manure.

More than one correspondent has lately asked: How shall I prepare hen-manure for use, what crops does it most benefit, and how and when should it be applied? To which we reply: Have on hand a lot of old barrels, and shovel the hen-manure into them, mixing it as you go, with twice its bulk of loam, muck or sand. It is an excellent plan to scatter fresh dirt or plaster under the hen roosts every few days. This compost thoroughly mixed together, may be applied by the single handful to every hill of corn. Forty bushels of the mixture will thoroughly manure an acre. It may be applied not only to corn, but also to cucumbers, melons, squashes, grape-vines, and indeed to everything growing in a garden. It is quite as active a fertilizer as Peruvian guano.

Poultry Raising is Profitable...II.

To the Editor of the American Agriculturist.

In a former number the question is asked "Will Poultry Pay?" Here is an answer: A few fowls well taken care of will pay as your "Connecticut Yankee," has shown by figures. My account for last year ran as follows:

To cash for 7 Fowls (Jan. 1857).....\$1.75
To cash for Feed during year.....\$6.86

Whole cost.....\$8.61

To Jan. 1859. By 67 dozen Eggs.....\$12.56
Market value of 34 chickens used..... 8.50
Market value of 33 Fowls on hand..... 8.25

Total.....\$29.31
Deduct cost..... 8.61

Leaves a net Profit of.....\$20.70

My old hens stopped laying about the first of November, and shortly after I killed four, leaving only two old hens on hand. On the 8th of December, my early Spring chickens commenced laying, as was proved by my gathering from 3 to 6 eggs a day through the month of December. My 34 fowls eaten have thus paid me near 30 cents per pound for the privilege of eating them. In this city (one of the great grain markets), wet grain and all kinds of feed can be had very cheap, which reduces the expense.

Oswego, N. Y. YOUR CITY FOWL.

Ashes and Plaster for Corn.

We only remind farmers, of what most of them know already, that if they wish to help forward their corn crop, they would do well to apply, at the first and second hoeings, a handful for each hill, of plaster and ashes. Mix them at the rate of one part plaster to five of ashes. The effect of this application will be most conspicuous on dry, sandy soils; but it will not be invisible anywhere. Don't forget to give your Chinese Sugar Cane the benefit of this treatment.

A Carrot Hoe.

Dr. Gill, of Dutchess Co., N. Y., writes: As weeding carrots is the great drawback to their cultivation, I'll give you a description of a hoe I had made which nearly does away with the hand-weeding. I removed the blade of a common small sized push, or "scuffle hoe" and cut out of an old saw a blade turned up the side. This turned up piece acts like a coulter, and you can run it within half of an inch of the plants without disturbing them. Use it as soon as you can see the plants, and your hand weeding is almost nothing. Try it!

Agricultural Schools—Morrill's Land Bill.

Though frequently and strongly urged to do so, we have not seen our way clear to give the warm support of this Journal to the Bill before Congress, introduced by the Hon. Justin S. Morrill, of Vt., which proposes to donate portions of the public lands to the several States and Territories, for the support of Agricultural Colleges. This Bill has already passed the House of Representatives, and is now before the Senate for consideration, and may pass that house before this reaches the reader. That such a scheme might and should be beneficial to agriculture, we have not the slightest doubt, but *would* it be, has been the question with us. If we are guided by what has transpired hitherto, in the attempts made by the General Government to aid the cause of agricultural improvement, we shall have little hopes of any benefit to be derived from the passage of such a Bill.

All this, however, is based upon the idea that if the lands were not thus donated to agricultural colleges, they would be sold for the benefit of the general treasury, and thus lessen the direct or rather indirect tax upon the people. But as the lands are now going, one million of acres to this enterprize (private speculation), two millions to that one, five millions to another, and so on, we confess ourselves, at last, to be decidedly in favor of the proposed donation in favor of agricultural schools. Some good may come out of it, we will hope much; but still we warn farmers themselves that in case the lands are granted, unless they take the matter in their own hands at home, the proceeds will mostly go to build asylums for broken down politicians, or to the beneficiaries of political parties, and that the, so called, agricultural colleges to be erected, will be nurseries of scientific nonsense, and promotive of more injury than benefit to real improvement in practical agriculture.

But without saying more now on this topic, we present below some extracts from a minority report of the Congressional Committee on Public Lands, for the purpose of giving a synopsis of what has already been done in reference to agricultural schools both in this country and in Europe. The minority report was drawn up and signed by the Hon. D. S. Walbridge, of Mich., and concurred in by Hon. Henry Bennett, of N. Y. The length of these extracts and our crowded columns make it necessary to use small type:

*** About one-half of the entire free male population of the United States over fifteen years of age, according to the census of 1850, are directly engaged in the cultivation of the earth, and a large proportion of the balance are indirectly so employed; yet this large part of our population are notoriously less instructed in those branches of scientific knowledge directly connected with the proper and economical management of their own pursuits than any other class of citizens in their peculiar occupations.

The undersigned is unwilling to believe that the cultivators of the soil are as a class, naturally less intelligent or less able with the same facilities to acquire knowledge than others, and of necessity must attribute their lack of scientific and practical information to the want of the opportunity of obtaining it.

The establishment of schools and colleges for the instruction of youth in scientific and practical agriculture, although of comparatively recent origin, and as yet but little more than commenced in this country, is not an experiment. Such schools and other institutions of a high grade have been established by most of the European governments, and their utility and importance fully vindicated.

In Russia the subject of agricultural education is committed to the charge of the minister of public domains, who through his subordinate officers has the supervision of the whole matter. Eight colleges of a high order are established in the Empire, possessing 28,220 acres of land, an endowment of \$37,000 each, and an annual support from the government of \$11,250 each. In 1849, they contained an aggregate of 706 students; more than fifty minor schools and model farms are established in various special schools

for instruction in some special branch of agriculture, as flax culture, &c., &c.

The government encourages by liberal appropriations of the public funds the Imperial Independent Society of Rural Economy, which is charged with the duty of publishing reports, periodicals, and other works on agricultural subjects. This society also sends agents over the empire and abroad in search of scientific and practical information, to be again disseminated by the society through its publications.

In Prussia, agricultural education is perhaps most thoroughly incorporated with their public administration.

Prussia has five agricultural colleges of a high order, twenty-eight elementary colleges of a lower grade, and fifty-seven special schools for instruction in particular branches of culture. There are seventy-two model and experimental farms in the kingdom. In these schools and colleges are taught the various systems of husbandry, farm management, book-keeping, cultivation of arable and grass lands, horticultural and agricultural technology, mechanics, natural philosophy, botany, mineralogy, a knowledge of soils, agricultural chemistry, veterinary surgery, breeding, raising and management of animals, and in fact every branch of education necessary to the intelligent agriculturist.

These efforts, made by the governments of Russia and Prussia, in behalf of agricultural education, are claimed by those governments, and admitted by all who have witnessed their operations, to be a great success.

In France, in 1848, agriculture was embraced as a system by a general law comprehending the whole Empire. Provision was made by that law for the establishment of agricultural schools in each of the departments. A higher order of colleges was established in districts, each containing several departments, and the National Agronomic Institute was established at Versailles. The whole system is subordinated to the appropriate ministry. The number of such colleges and schools in France now exceeds one hundred, and the beneficial results of agricultural knowledge obtained at them is said to be entirely satisfactory.

In all, or nearly all the German States, more or less encouragement is given by the governments to the establishment of agricultural schools, and the general dissemination of scientific and practical knowledge among the people, with, it is believed, satisfactory results.

Spain, Portugal, and Turkey, it is believed ignore the subject quite as much as the government of the United States.

Agricultural schools are established in various parts of England and Scotland, but are principally supported by private enterprise and charges for tuition; but in Ireland the government of Great Britain contributes liberally to the support of such schools, and its effect is seen in the increased productions of the island, and the comparative content and improved intelligence of the people.

These efforts on the part of the governments of the Old World, to improve and elevate the condition and intelligence of the toiling millions, stimulated by the pervading spirit of the age, have turned the attention of the people of our own country to the subject of a more comprehensive and perfect system of agricultural education, and in a few instances the State legislatures, being nearest to, and first partaking of the popular impulse, have made partial provision for carrying out their wishes.

The State of Michigan has a constitutional provision requiring her legislature to establish an agricultural college, in obedience to which the legislature of that State, in 1855, made an appropriation of fifty-six thousand dollars for that object, with which a tract of land of near seven hundred acres was purchased, and buildings erected. In 1857, the legislature made a further appropriation of forty thousand dollars for the use of the institution, and in May following, the first class of students was received. The college is under the supervision of the State Board of Education, and the faculty consists of a president and five professors. At present there are one hundred students in attendance. The design of the institution is to receive the student direct from the common schools of the State, and give such a thorough English and scientific education as will render him an intelligent citizen, an accomplished farmer, and qualified to discharge any duty his country may require at his hands. Mathematics, agricultural chemistry, the natural sciences, the application of science to the industrial arts, veterinary practice, horticulture, and indeed all such studies as are usually taught in such institutions, and can be embraced in a four years' course, will be pursued. Labor is inseparably associated with study, and physical is combined with mental education in the institution, and it is one of its objects to make the cultivation of the soil instructive, varied, interesting, and attractive, as well as profitable. The trial has been successful, and the expectations of its founders, the faculty, and students have been realized as far as so limited a test will allow.

The Farmers' High School of Pennsylvania, was incorporated in 1855. The design is similar to that of the Agri-

cultural College of Michigan. It is located near Bellefonte, Centre Co. Its resources consist of \$5,000, a legacy of the late Elliot Cresson, \$10,000 subscribed by the citizens of Centre Co., \$10,000 appropriated by the State Agricultural Society. The legislature have appropriated \$25,000 absolutely, and \$25,000 on condition that further subscriptions to an equal amount shall be obtained. A building is in process of erection which will accommodate three hundred students. The present intention of the trustees is to open the institution within the current year with sixty to seventy students. The faculty will consist of a president, with four or five professors. The experimental farm consists of four hundred acres, two hundred of which is the noble gift of one of Pennsylvania's noble sons—Gen. James Irvin, of Centre Co.—and two hundred sold by him conditionally, the institution being obliged to pay interest only upon the fixed valuation. The whole farm, except about sixty acres, is under cultivation.

The Agricultural College of the State of New York is located at Ovid, between Seneca and Cayuga lakes, and on the banks of the former. The farm consists of 686 acres. The resources of the institution are \$40,000 loaned by the State. A college building is in process of erection, which will accommodate 350 students, capable of being enlarged to contain five hundred. The design, plan, and course of study will be essentially the same as those of the other institutions named. It will be under the control of a board of trustees.

The People's College of the State of New York was chartered in 1854, and is located at Havana, Schuyler Co. It would seem, from the perusal of a pamphlet issued to the public from the institution, that it is the intention of its managers to give instruction in agriculture and the mechanic arts, in connexion with a regular literary, or in such one or more branches of knowledge as the students may prefer. Connected with this institution is a farm of two hundred acres on which the college buildings are being erected, and on which it is contemplated to erect buildings for carrying on various mechanical operations, in which, or on the farm, students may, in their discretion, labor a portion of their time; thus acquiring a practical knowledge of the particular branch of business they propose to follow, while contributing largely, or perhaps wholly, to their own support and tuition while acquiring an education. The institution is to be controlled by a board of directors, with a president and competent number of professors.

In Maryland \$50,000 has been subscribed by public spirited individuals for the establishment of an agricultural college. The State has appropriated \$6,000 per annum for its perpetual support. Proposals are issued for the purchase of a suitable farm. The institution is to be managed by a board of trustees chosen by the stock holders.

The details relative to management, course of studies, &c., not yet determined upon.

Massachusetts, in 1850, authorized a board of commissioners to report a plan for the establishment of agricultural schools. Professor Hitchcock, one of the commissioners, made an elaborate report relative to agricultural Colleges in Europe, and the board recommended a plan to the legislature, but no further action was ever taken upon the subject.

In Tennessee, Franklin College, near Nashville, was organized in 1834, with the design of making it an agricultural college, uniting culture of the soil with intellectual training. Physical labor was made optional with the student. That feature was finally abandoned; and the institution is now converted into a classical college.

The Union Agricultural Society of Virginia and North Carolina have established an experimental farm near Petersburg, at a cost of \$30,000 which is now in operation under a practical overseer. An application to the legislature of Virginia for the endowment of an agricultural institute in connection with the farm failed of success.

In Mississippi a State agricultural bureau has been established by recent enactment.

The State of Ohio has established a State board of Agriculture, the object of which seems to be to collect agricultural statistics, but to what extent or with what especial object the undersigned is unable to learn.

Connected with a classical institution at College Hill, near Cincinnati, is a scientific department and experimental farm, where are taught various branches of learning directly connected with horticultural and agricultural pursuits.

In Georgia there is an agricultural professorship connected with the University of that State, with an endowment of \$20,000, a donation of one of her public spirited citizens, where the sciences directly connected with agricultural pursuits are taught in regular courses of lectures, with, as the undersigned is informed, much advantage to the agricultural interests of that State.

Scientific schools and agricultural professorships have been established in connexion with very many of the universities and colleges of the country to, in some degree,

satisfy the irresistible craving and demand of the age for more thorough and practical instruction in the arts and sciences that bear directly upon the industrial occupations of men.

From the census of 1850, we learn that the entire free male population of the United States, over fifteen years of age, was 5,371,676. Of this number, 2,389,013 are returned as farmers and planters, while in the professions of law, medicine and divinity, 94,515 are employed. To educate these 94,515 men for the learned professions, 234 colleges are established, endowed by many millions of dollars, and two millions of dollars are actually expended every year in the education of 27,000 students.

The Weather.

May has had its usual prevalence of cold, sour, easterly weather, and to all people of short memories, has seemed the most wet and nasty of all Mays upon record. But, fortunately, there are records of the weather. Kindred spirits with the philosopher of Brooklyn Heights make note of the passing changes, and hand down to posterity the tables. The blossoming of peach, cherry, and apple trees is put down in many an almanac in the farmer's home. Frequently the apple has not bloomed until the 25th of May, and occasionally not until June 1st, in this latitude. The season is rather more than an average for its earliness. It has been wet during the month. But it should not be forgotten, that May of 1857 had twenty-one dark, cloudy days, with more or less of rain. Many seeds have probably rotted, and the usual amount of obfurgation has been bestowed upon the worms on that account. It is not yet too late to plant many of the field and garden seeds a second time. Cucumbers, melons, squashes, and sweet corn make nearly all their growth after June 1st. It is still in ample season to plant corn and potatoes in the field. Replant in all cases where there has been a failure.

The Late Planting of Corn.

No farmer should despair of a good crop, whose seed is not yet in the hill. Corn fails to come up from poor seed, and from too early planting, oftener than from all other causes combined. In places north of this latitude, June 1st is as good as any earlier date. One of the premium corn growers of Connecticut plants uniformly June 6th, or as near that date as possible. He never fails to grow a good crop, and at much less cost than the market price per bushel.

Hay Caps.

These articles we wish to keep before the people. We are persuaded from our own experience and observation, that no small investment, in tools to work with, will pay better than hay caps. Hay cured in the cock is much better than that overdried in the sun. With these articles on hand, the farmer is master of his circumstances, and can throw the old adage, "Make hay while the sun shines," to the winds. At least, he can stop making it before the juice is all evaporated, and can put his hay into cock, without fear of rain, to finish the curing process in the best manner. A single shower will often damage a ton of half-dried hay, four or five dollars. The hay-caps, to save it, would not cost much more. They are almost certain to pay for themselves every season they are used, and in some wet seasons they will save several times their cost. They can be got up for from twenty to forty cents apiece, according to size and quality. For an ordinary cock, weighing about a hundred pounds, a cap one yard and a-half square is plenty large enough. It is well, however, to have a few of two

yards square, for extra sized cocks, for the tops of stacks, and for shocks of grain which are not put up to stand the weather. The objections to hay caps are generally made by persons who do not understand the use of them. They are best put on with loops at the corners, and pins; and with a little experience in handling, the ordinary force upon a farm in haying time will be able to secure a morning's mowing against all showers that give any notice of their coming. It is very little work to make them, they need no painting, and they do protect the hay. Get them in season that you may not have to suffer the upbraidings of conscience, when you find yourself caught with six tons of hay down, all wet and mouldering, for want of a few dollars' worth of cotton cloth, which is now sold at an unusually low price.

White French Turnips—Prince Albert and Black Mercer Potatoes.

To the Editor of the American Agriculturist:

I am glad to see by the May number of the *Agriculturist* that you have secured some of the Long White French Turnip seed, and offer it for distribution among your subscribers as a premium. This is a hardy variety, a late keeper, and approaches the Ruta-baga in size and shape. As for flavor, either raw or cooked, I never tasted of any other sort equal to it. No member of my family likes boiled turnip, but on my asking each one of them to try this, the other day at dinner, they found it so rich and sweet in taste, that all ate heartily of it, and voted it must henceforth be one of the dishes of our table. I only regret these luscious turnips are not to be had now in our market. The above is my experience; how others will find it I cannot say—for we know that all root-crops vary much in flavor, dependant something on the season, the soil, and the manure. For example, take potatoes of the same variety, and as near alike as possible, and plant some on a dry limestone or gravelly soil, without manure, and the others on a rich, moist loam, or on land highly manured from the barn-yard, or with sea-weed, or any rich, putrescent fertilizer, and the crop on the dry soil without manure will be far superior in flavor and meanness to those grown under the other circumstances mentioned.

While on the subject of potatoes, allow me to say that in respect to the *Prince Alberts*, I disagree entirely in opinion with your correspondent, Mr. Stephens, page 100, of your April number. This potato requires a warm season to ripen well in this climate, and further North, and then it is one of the very best varieties within my knowledge. Last season, it is well known, was very late and cold—all of a fortnight later than usual. Then the Summer was not only unusually cool, but quite wet. Hence, some of those grown last year have got the reputation, according to Mr. S., of "boiling wet and soggy." It was the season, the soil, or the manure which was in fault, depend upon it, and not the potato.

Of all the varieties of potato I have had on my table, I prefer the *Black Mercer*. It is the best keeper, and the most nutritious and mealy. I have had them as late as the fore-part of July, and even then preferable to the new *Bermuda*, *Norfolk*, or any early sort grown in this neighborhood. The only objection to it is, shy bearing. But it is not in the nature of things to produce so large a crop of dry, mealy potatoes from a given area of land, as of the coarser fiber, and more watery kinds, like, for example, the *Red Merino* the *Rohan*, and others I could mention.

A. B. ALLEN.

New-York, May 6th, 1858.

The Long White French Turnip.

After our notice of this, last month, we received further samples of the turnips, which we submitted to several parties for trial, and they all unite in calling it the best they have ever tasted. See preceding page. The proprietor of one of our city hotels intends to raise a large crop for his own table. Several correspondents from different parts of the country write that they have received seed from Rhode-Island friends hitherto, and have found this turnip all that we have represented it to be, and more; and they express gratification that we are bringing it before the country. One subscriber in Ohio, says: "if the *Agriculturist*, during its whole existence, accomplished nothing more than to introduce this turnip generally, it would be well for the country that it had existed." This is speaking in stronger terms than we can endorse, though we hope much for it. The seed can be sown at any time from the middle of June to the first of August—better not till July, for a main crop. A plot of one-eighth of an acre, will give a fair chance for trial, and furnish a supply of excellent table turnips for all of next Winter and Spring, besides some for feeding stock. We have had numerous requests that we should sell the seed, but we have none to part with in that way. What we have will be given out in premiums for new subscribers, of which the particulars are noticed elsewhere under business notices. (Extra Premium No. 4). It will be easy to secure one, two, three, or more ounces free of cost, by simply securing that number of subscribers for either the English or German editions. An ounce will plant fully an-eighth of an acre, with careful sowing.

Critique Upon the Farm Building Articles.

To the Editor of the American Agriculturist:

I have read with interest the article in your March number giving a model for a "laborer's cottage." Most persons of ordinary common sense will agree with what is said about useless ornament, useless breaks, and ziz-zag roofs which invite leaks, &c., and in condemnation of the many pretentious, foolish, frail, inconvenient and expensive structures which have been "perked up" all over the country. Perhaps it would be well to inquire how much of the fault justly found with them, should really be laid at the door of the architects, and how much with persons who have dispensed with an architect altogether, or if they have employed one have departed from his plans, or hampered him with instructions which have only hindered him and resulted to the injury of his employers; or whether those who have employed architects, have taken the trouble to discover whether their architect has really been one who had a right to that title, or an ignorant pretender who has appropriated it. What your article hints at is certainly true, that many an excellent carpenter and mason has been spoiled, to make a bad architect. The only way in this free country to have beautiful things is for each one to study for himself what is beautiful in Nature and in Art. Then those who have occasion for the services of an artist will know how to distinguish between the false one and the true; will know bad work from good; bad ornament from good; will know that good ornament if misplaced, becomes offensive; and will appreciate the beauty which lies in simple lines, and in the fitness of things. The series of articles, therefore, now coming out in your valuable paper, it is to be hoped

will, by their boldness and force, do much toward bringing about such a result.

But while most of your readers will approve of what is said in the particular article in question, to advocate simplicity, and to dispel the vulgar error that ornament is necessary to make a structure pleasing, yet I think that at the same time all must admit that the cottage given as a model is not pleasing. Now, since beauty is not incompatible with simplicity or convenience, could you not give us a cottage which will be just as cheap and just as convenient, and yet more pleasing in its appearance? Almost all of us are sensitive to a pleasing or a disagreeable result, though we cannot all analyze our feelings and tell just what it is which affects us, or why it gives us, as the case may be, pleasure or annoyance. I may not be able to tell *why* each of the following points in the model has a disagreeable effect, neither is it to be expected that those who have given the points no previous thought, will all find the same special faults that I do, though they may all agree in thinking the whole ugly.

These objections are not based upon the appearance of the model only as shown in the engraving, but upon the result of observations of thousands of similar cottages scattered all over the country.

1. Almost every one must have noticed how peculiarly ugly is the very common arrangement which is adopted for the model of a main building with the eaves to the road, and a lean-to behind. A lady who has a large property in a neighborhood where they are especially plentiful, calls them "the thorn in the side." They always have a mean, pretentious, best-foot-foremost look, standing like a slatternly woman with her dirty hands—of which she is half ashamed—behind her. There are two old-fashioned arrangements of the lean-to, both quainter, cosier, and equally convenient.

2. I have always noticed when a cottage or an unpretending farm-house has the door on one side, instead of facing on the public road, that it has a pleasanter and more complete-in-itself sort of look. They can still have the windows in front through which the good wife is able to see the "passing" while she is at work.

3. The chimney in the model is too small and too short. I am no advocate of fancy chimney-pots, tops, shafts &c.; but we all like comfort and everything generous that suggests it.

4. The use of extending the lean-to beyond the rest of the house is not apparent, and presents a peculiarly distasteful specimen of "broken lines and ziz-zag angles."

5. As the porch has no seats and scarcely room for any, it seems a rather useless appendage for such a humble cottage; besides, it is too high and too narrow. Would it cost much more to make it pleasant to sit in, and pleasant to look at?

6. The lean-to must be very dark. The only window is put just where it can give least light.

7. Everybody must have noticed how annoying it is to see a window stuck in one corner of a house, and no window, nor anything else in the other corner to balance it. Sometimes this cannot be helped, but almost always, by a little forethought, it can. It can in this instance, and without more expense; for by putting the bed-room behind (where it had better be, otherwise people could look in the front window and see the occupants dressing themselves), and the buttery and stairs in front, the front window can remain where it is, and the one window in the side of the house be placed in the centre, under the ridge instead of in the corner.

8. Would it not be well if that shelf-like look of eaves could be avoided? And is it intentional, or the fault of the engraving, that the house appears to be set close down on the public road?

In conclusion, as others besides myself take an interest in the subject, will you not be good enough to mention in your next number, where we can find the log cabins in architectural works? And also please to describe a log cabin, as usually made by choppers, and oblige

AN ATTENTIVE READER.

REMARKS.

Our correspondent is a little hypercritical in the above strictures upon our "laborer's cottage;" but they shall be briefly noticed with all due respect to his (or her!) taste, as differing from our own. In the first place, the engraving is a bad one, and not a true copy of the drawing we sent to the engraver,* but we were obliged to use that, or postpone the article for another month or two. The drawing did not give that "shelf-like" appearance to the roof, which in reality combs over the front and gables, giving the cottage a cosy, hospitable look. As to the internal arrangement, it may be altered to the builder's taste or convenience, there being nothing arbitrary in that; and windows may be inserted at pleasure, either in number or position. We gave the sketch as *suggestive*, mainly, intending more to lay down a principle of construction in the class of cheap cottages, than to dictate a particular plan of accommodation.

As to some other alterations suggested by our correspondent, we only answer that our tastes, both in convenience and utility, differ. It is a "laborer's cottage," simply, and only a hundred and fifty, or two hundred dollar affair, at that. The porch is but a *hint*, and may be omitted altogether, or stretched along the whole front as a verandah, which last, as a thing of taste and appearance, we would prefer, as giving the structure a more finished and complete look. The chimney is but a vent for the smoke of a single stove-pipe—therefore, why so large and high as our correspondent demands?

Build that cottage *back from the highway*, not on it, according to our *description*—not the *cut*; throw a verandah along the entire front, with a few climbing plants spreading their shade along its columns, and the thing would look pleasant. Our own built and inhabited model does so, even without the porch. We might enter into a labored argument with our correspondent, moved thereto by his, or her suggestions, but this is not the place for it.

In answer to the inquiry, "Where are the log cabins in architectural works?" we say, page 116 in Vaux's *Villa and Cottage Architecture*, with four pages of *Essay* in connection. We have seen "log cabins" in another work or two of the kind, not now recollected. We have "carried up" many "a corner" of these log cabins in our early frontier life, lived in them for years, and know somewhat of their appertainings. We may describe one another day.—Ed.

*Let us say, once for all, that in this entire series of "Farm Buildings," the engravings are entirely unsatisfactory—more so, on the whole, than anything else we have had to do with in this line. They have in each case been returned too late for new cuts to be made. The first one criticised above, was received from the writer but a few hours before going to press, and of course was hastily cut. The remaining ones were given out to new parties who had executed some good work previously, but with this experience we shall be compelled to return to our long-time engravers, who have seldom disappointed us in the character of their work.—Publishing Editor.

Farm Buildings...IV.

A WORKSHOP, CARRIAGE-HOUSE, AND STABLE.

We do not know that we can better dispose of these three indispensable appendages to a well-conditioned farm establishment, than to throw them together in one combined structure, within convenient distance of the chief dwelling-house. Our elevation and ground plan are both easily understood, and simple in arrangement.

The main building is 40 feet long, 24 feet wide, and the posts 14 feet high. A lean-to stable is added, 24x14 feet, with 8-foot posts on the outer side, and a shed roof with slope of six feet, or a trifle less than a quarter pitch—that of the main building being one-third in slope. On the left is a workshop, 16x24, with a front door and two side windows. A flight of stairs is near the further inner corner, leading to the timber-loft above. A joiner's work-bench may stand on the side between the windows. Here may also be the tool-chest, and racks, and pins on the walls to hang the larger tools, and various things put in for safe keeping. Over head is a lumber-room, with a door-window hung on butts or hinges, to take in lumber, and a glass window in the gable to light it. A door leads from the shop into the waggon or carriage-room, 24 feet square, entered by two large double doors. Two windows light the room, in the rear, and a flight of steps lead to the hay-loft above. A harness-room and feed-bin may be put up in the opposite or left hand corner, if required, and the affair is complete. This, and the workshop rooms are 9 feet between joints, leaving a hay-loft over the carriage-room, of 4 feet upright on the sides, and the whole pitch of the roof above, with a couple of blind-doors to receive in the hay and straw.

The stable, by an error, as laid down in the plan, is 16 feet wide, but in reality should be only 14, that being wide enough for common use, with either horses or cows. A loft is over it to store the straw for bedding. A window on one side, as shown in the drawing, and another at the further end, not seen in the cut, give it sufficient light, and serve also to let out the manure and litter. It contains two double stalls of 8 feet each, and a single one of 4 feet, besides a side passage of 4 feet from the carriage-room. A line of mangers with rack above is in front, occupying 2 feet. We give no plan of racks and mangers, as they are exceedingly simple in construction, and almost every one has his peculiar fancy in arranging them.

It will be seen that we have thrown the broad, or hanging roof over the building as usual, the eaves projecting 2 or 2½ feet over the walls. The stable roof in front comes out on a line with that of the main building, and running up immediately under it the effect is not incongruous. This plan, indeed, is almost an exact copy of a building of our own, which we planned, for like uses; and we are so well satisfied with its arrangement, throughout, that we would not alter it.

COST.

This will depend altogether on the manner in which it is built and finished. It may cost \$300 or \$600, built of rough boards, or planed—with plain cornices, as in the cut, or with brackets, as in our best farm-house appendages. The expense and particular manner of the building, in labor and material, depend so much on the taste and means of the proprietor, that we need not go into it, supposing him to have sense enough to regulate that matter.

In the color of all these outer buildings, where washed or painted, we prefer a light, *Quaker* drab, with the body of the paint chiefly white lead. Any

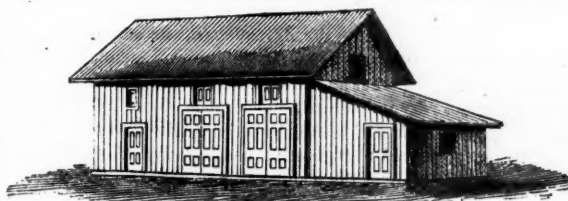


Fig. 10.—CARRIAGE HOUSE, STABLE AND WORKSHOP—ELEVATION.



Fig. 11.—FLOOR PLAN.

good painter knows the proper ingredients. That color is strong, durable, and agreeable to the eye, and comports well with the natural hue of surrounding rural objects. We may, perhaps, as well say here as anywhere, that all farm outer buildings should have a cheerful, light color, instead of the dark and dingy shades which modern innovators and fancy architects have so freely introduced. We are not in favor of a clear white, as too glaring, but a subdued, neutral color—neither yellow, red, dark brown, nor sooty.

A small ventilator may be thrown into the roof, as in the carriage-house of the dwelling, if desirable, but in a building of this kind it is more of an ornamental appendage than absolute utility.

It may be objected against putting the stable on as a lean-to appendage, but it is advantageous so to do, instead of its forming a part of the upright building. The floors and sills being more or less damp, from the continual droppings and stale of the animals kept in it, are liable to decay, and must be replaced, which is more easily done in a lean-to than otherwise. Besides, the lean-to appendage gives the building a snug, comfortable look that rather adds to the homelike appearance of the place—an expression, as we think, more in character with the farm than buildings wholly upright in all their proportions.



Fig. 12.—TURKEY COOP.



Fig. 13.—HEN COOP.

These coops are to confine the mothers, and chickens when young. The turkey coop is 3 or 4 feet wide, and 6 or 8 feet long, as may be chosen, and three feet high from the sill to the eaves; the gable boarded up, and a broad roof thrown over the whole.

The hen coop is 4 feet long, and 2 feet wide, and two feet high at the peak of the roof, which is of boards, lengthwise, from top to bottom, and slats nailed perpendicularly, or crosswise, at option.

It is not necessary to describe these further, being so simple that any one can understand them. They are moveable, and may be made in the very roughest manner, and small wooden troughs or earthen, tin, or iron dishes set down to feed in.

We have used these kinds of coops many years, and find them, altogether, the most convenient and economical of any. When not in use, they can be piled away in the waggon-house, or laid

up, one over the other, next a fence—the cheapest possible good contrivance one can have of the kind.

The hen coops are the best things for a goose to sit under, during the season of incubation, as she is secure from disturbance, and by raising the coop daily, a few inches, she can pass out freely

to her food and exercise; and when again on her nest, it can be shut down. Where several geese are sitting at a time, such an arrangement is by far the best, preventing mistakes in getting into into each other's nests, and quarreling, which, otherwise, they would be apt to do.

Tim Bunker on Curing a Horse Pond.

MR. EDITOR.—Your readers have already heard something about Jake Frink, and how he took the Premium on carrots over me at the Hooker-town Fair. Perhaps they would like to hear something about a horse-pond that Jake used to own, about half way between my house and his. It was full a quarter of a mile from his house, but as it was the nearest water that Nature had provided, it had always been used to water Jake's horses and cattle, when they were not in the pasture. It lay by the road side at the foot of a gentle hill, and the water for all the wet part of the year flowed off over the adjoining lot, making it a sort of quagmire, except in times of drouth. An animal would mire in any part of the lot up to its knees. It never occurred to him, that he could bring water into his yard at a little expense, and save this daily journey of his cattle to the pond. He never thought how much manure was wasted along the road, and what a nuisance his cattle became to his neighbors, as they were often turned into the road, to get water, and to take care of themselves. He never thought, that the horse-pond spoiled two acres of the best land on his farm, and that it cost him at least twenty dollars a year to keep up this watering place. The quagmire did not pay him the interest on twenty dollars a year. It ought to have paid him ten per cent. on two hundred.

The horse-pond I did not care anything about, but Jake's cattle, geese, and pigs, always drawn up my way by this water, were a perpetual torment to me and to my neighbors. I thought I had a right to abate the nuisance. So I hailed neighbor Frink one day, last Fall, about selling the two-acre lot near the horse-pond. It was before the Fair, for since my remarks about stimulating the carrot crop with horse manure he has been rather offish. Ever since I put down the tile drain in my garden I have formed a great idea of curing wet land, and I thought this piece of sour, unprofitable pasture might easily be turned into a productive meadow. Says I "Mr. Frink. What will you take for that bit of swamp land at the foot of the hill?" "It is worth about twenty dollars an acre, I suppose. You hold a note against me for about what the land would come to. Give me the note, and I will give you a deed." "That is rather a hard bargain, neighbor, the land does not pay you the interest on half that sum. But as I want the land, I will take it." The deed was given, and I took possession last November. We had a wonderful mild Fall and Winter, and I went right to work upon the land. The old broken down wall by the road side that

had always been an eyesore to me, I immediately dropped into a four foot ditch, making a covered culvert of the stone. There was fall enough to take all the water clean from the bottom of the ditch, and carry it off at the lower side of the adjoining lot. I cut four ditches at right angles to the ditch by the road side, and put in tile at the bottom. The depth, to which they were laid, varied from three to four feet, as the surface was not exactly even. I had no sooner cut the main drain than the horse-pond all run away, leaving the bottom at least two feet above the water line in the adjoining drain. The change in the looks of the land this Spring is astonishing even to myself. Here, where cattle have always mired as they went out to crop the first grass of May, there is now a firm foothold. I have already plowed the most of it and have put in a crop of early potatoes. The drains are just thirty feet apart, and the tile at the lower end constantly discharge water, and will probably continue to do so, until mid-Summer.

But my astonishment was nothing compared to Jake Frink's, when he came along and saw his horse-pond entirely evaporated.

"My goodness, Squire Bunker, what does this mean? What am I going to do for a place to water my cattle in?"

"Hold, neighbor Frink. Did you sell me this piece of land?"

"I did."

"Did I promise you that I would not improve it?"

"No you did not, but who'd have thought, that you was going to knock a hole in the bottom of my horse-pond in this style?"

"Water will run down hill, neighbor Frink, and I can't help it. The same law, that enables me to drain this swamp, will bring water from the hill-side right into your yard and house. You then can save all your manure just as I do, and your cattle will not have the trouble of going after water in the cold of Winter, and you will not have the trouble of scouring all Hookertown, to look them up. Your cattle will no longer be a nuisance, and you will save yourself a world of fretting and scolding. I have really done you a kindness in drying up this pond hole. But as you may not look upon it in that light, I will give you the muck that lies in the bottom, at least a hundred cords of the wash of the roads, and the droppings of your cattle for the last twenty years. It is better manure, to day, than a great deal that you cart out of your yard."

Mr. Frink, took my remarks in dudgeon at the time, and hardly spoke to me for a month. But this Spring the lead pipe was laid, and he has now as good a watering trough, fed with living water, as any of his neighbors. The muck, too, is not despised, for as I write, I see Jake's cart, well loaded, going up to the yard where muck has hitherto been a great stranger. In short, I have strong hopes of making something out of Jake yet, though he cheated me out of the Premium. But whatever may be true of his reform, the horse-pond is thoroughly cured, and if you will come up here on the glorious Fourth, to help us celebrate, I will show you as handsome a piece of potatoes as ever grew out of doors.

Yours to Command,

TIMOTHY BUNKER, Esq.

Hookertown, May 15, 1858.

Well done for Squire Bunker. There is no need for further evidence that the *Agriculturist* is doing a good work. Just turn back and read Mr. Bunker's letters two years ago, and see what improvement he has made. Who would have thought it? Then he was a cautious, conservative farmer

afraid of "book farming;" but being inveigled into taking the *Agriculturist*, he has, under our tuition, become not only an apt scholar, practicing what he learns, but he is now quite a missionary in his own neighborhood, shedding abundant light and truth, by his example at least. Good speed to Squire B., and to many others like him, all over the country.—Ed.



Wonders of the Bee Hive...XII.*

SWARMING.

One of the most curious things we have to tell about the bee, is the process by which families or stocks of bees are multiplied. It would be a problem difficult of solution for one ignorant of the mode. Here is a family consisting of one mother, and her offspring; the former living several years, while the common bees are short-lived. She cannot bear the presence of rivals in her hive; her own departure would occasion great commotion; she is utterly unable to go out alone and lay the foundation of a new colony; and ten thousand bees without her would not be able to produce any brood or keep their number good. And against any scheme of colonizing is the strong instinct that brings the foraging bees directly back to the old hive, and the persistence with which they cling to their stores of honey and their brood comb.

But God has given them other instincts which come into operation at the right moment, and make a certain number perfectly willing to abandon their home and fellow-workers, never more to return. Early in the Summer, perhaps about the time some of our readers receive this number of the *Agriculturist*, the hives begin to be uncomfortably full of inmates, and preparations are made for swarming. Royal cells are constructed like those described on page 41 of this volume, and the occupants are nicely cared for. This is for the benefit of those to be left in the hive, for the mother-bee is herself going to emigrate with a large number of workers and drones. Perhaps scouts are sent out before hand to see if quarters can be secured in the neighborhood for a term of years; such at least is the opinion of eminent naturalists. At length, on a pleasant day, and usually not far from mid-day, the occupants of the hive are all found to be in great commotion; some of them are filling their bags with honey, and others are loitering around, like people in the streets of a

* We present above an original fancy sketch of a rustic hive, and the departing swarm, suggested by something we have somewhere seen. The hive is a section of a hollow tree which the bees had chosen as their home, sawn off into the length here represented.

city when a regiment of soldiers is expected to come along. By and and bye with a great rush and whirl they pour out of the hive, as if the house was on fire, and fly off in a cloud, and settling down in a cluster on the branch of an apple tree, they speedily come to order and consult as to the next step. After remaining there an hour or two, if not taken care of, they will perhaps start off in a bee-line for their new home, which may be miles distant. While clustered on the tree, they may be handled without injury, as their abundant supply of food makes them docile, and if then provided with a home they may accept the offer of hospitality and forego their own plans. Sometimes, instead of pausing at all, or hovering around in circles, they dart away at once in the direction of their new home. Sometimes also in an apiary they are glad to take possession of an empty hive, if one stands ready for them, and if it is well stored with comb, it is all the better, and more attractive. In some places, the attempt has been made to arrest the flight of swarms by the ringing of bells, the beating of tin kettles, and similar noises; but this probably has no effect upon them, and the custom may have arisen at first in villages where the discovery of a swarm in motion was announced by bells, that the owners might look to it and be able to identify their own bees.

The swarm of bees going out in this way is able, to maintain itself. The workers are provided with food for several days, and can at once begin the manufacture of comb; and as soon as the new cells are made, the mother-bee is ready to lay eggs in them, and prepare for an increase of the population. On the other hand, those that are left behind, have abundant store of honey and of comb; the brood in the cells are maturing every day, and from the royal cells, they may be sure of at least one queen, to take the place of the one that left. Should two of these come to maturity, however, there must either be a duel between them, or one of them must go off with a second swarm, giving way to her rival, and still further reducing the strength of the stock.

It is supposed that those who have gone from the hive in this natural fever, lose entirely the instinct which had before impelled them to return to the old home, and readily adapt themselves to their new hive, whether it is placed two feet or two miles from the old stand.

We leave the subject for the present, with this perhaps the greatest of wonders. It is to the bees as if Queen Victoria, with a portion of her subjects and as much treasure as could be caught up hastily in their hands, should some day leave their homes, their gardens, their palaces, their all, and take ship for Australia, to found there a new kingdom, entirely separate from the old. But in these instincts and in all the wonders of the hive, the hand of God is seen. We admire these things most, as exhibitions of His workmanship, and providence and wisdom: His hand is seen in the structure of the bee; His controlling power in the impulses by which it is led to act. The cunning work in wax, the economy in the use of material, the treasuring up of stores for Winter's use and for human comfort, the provision for an increase of numbers, the harmony and industry of the workers, and all the curious things which have been observed for centuries, turn our minds from Nature to Nature's God. He only is from age to age; but all His works praise Him, and blessed be His glorious name forever and ever.

All these things are made for man. Dominion is given to our race over every beast of the field, and everything that creeps and flies. And for what end is man made in the image of God? and why has he received authority and power? Is it

that he may be like the brutes that perish, indifferent to God, forgetful of his Maker's will? or like the horse and mule that have no understanding, whose mouth must be held with bit and bridle? Nay, but rather that he may everywhere read the revelation God has made, in Nature as well as in scripture, and reverently, in a meek and child-like spirit, may learn "to think the thoughts of God," and do his pleasure. Herein is human greatness; herein can man be made like his Maker.

To Make Bees Cluster in Swarming.

To the Editor of the American Agriculturist:

In this section of country there are knotty bulks growing on the sides of trees and saplings, which resemble clusters of bees. I cut one of these to the size of a small swarm, bore a hole in it, and drive in the handle. For convenience, I have three of these—the handles ranging in length, from 10 to 20 feet, to suit the height of the shrubbery near the bee-house, on which the bees will be likely to settle. When bees have commenced settling elsewhere, I have frequently set the pole near them, shook them off the limb, and caught them on the knot, and then carried them to the same scaffold from which I have hived more than 20 swarms the last Summer. I spread a cloth over the scaffold, set the box on four blocks $1\frac{1}{2}$ inches high, and shake the bees down at the sides of the box. They generally need to be swept down gently off the box, with a small leafy branch, and they will go into their new home.

JOSHUA EDWARDS.

New Grenada, Fulton Co., Pa.

Observing Bee-Hives.

In order to study the habits of the honey-bee, and to attain personal knowledge in respect to many strange things which are told of it, it is necessary that we should have a hive so constructed as to be open to inspection at all times. Having derived much instruction and satisfaction from the facilities afforded by an observing-hive, we comply with the request of several correspondents to give some account of the mode in which one can be made.

An observing hive is essentially a common hive with glass sides, but made so narrow in one direction that it will contain but a single comb. This form gives the observer a chance to look in upon the bees at work, and see both sides of the comb at any time. We insert two of Mr. Langstroth's engravings as the readiest means of illustrating our views, though they introduce one peculiarity, to be spoken of presently, that is covered as we suppose by his patent right, and that consequently can be used only with his permission and in connection with his common hive.

All that is essential in an observing hive, is simply a frame work sufficiently large to hold one piece of honey-comb, with glass sides, and arrangements for entrance and for ventilation.

Fig. 1, is a side view, and fig. 2, an end view, of such a hive. As the dimensions are not essential, except when used in connection with Langstroth's hive, we shall not adhere to those stated by him. The material may be pine boards, seven-eighths of an inch thick. The base-board *a*, is 24 inches long, by 4 wide; *b*, the bottom of the hive, $17\frac{1}{2}$ by $2\frac{1}{2}$; the front and rear are formed of two posts, *c*, $11\frac{1}{2}$ by $2\frac{1}{2}$; *e*, is a movable cover, 21 by 4, while on each side is a thin strip *d*, an inch wide, and as long as the hive. If then the bottom board *b*, has a rabbet made in each of its

upper corners, $\frac{1}{4}$ each way, and the inner corners of the posts be rabbeted in the same manner, up and down, they will give room for two panes of glass, 11 by 18, which will come up flush with the cover, and may be kept in place by brads or tins. This allows just an inch and a half between the glasses, a space sufficient for one sheet of comb, and for the passing of bees over its surface.

For ventilation two holes, an inch in diameter, may be bored through *a* and *b*, $1\frac{1}{2}$ inches apart from center to center, the wood being cut out between them. Similar holes may be made in the posts *c* *c*; and all these are to be covered, on the inside, with wire cloth.

The entrance is made by boring a hole $\frac{1}{4}$ of an inch in diameter, $3\frac{1}{2}$ inches deep into the end of *a* above *g*. One inch from the end of *b*, start a similar hole and bore slanting so as to meet that in *a*. An alighting board *g*, may be added, 4 by 4 inches, and, if desirable, clamp on the cover *i*, *i*.

In our engraving another inside frame appears; this is moveable, and is intended to sustain the sheet of comb. This is one of the peculiarities al-

would risk this experiment this month. On the issuing of a first swarm secure the queen and clip her wings. Removing the cover, invert the hive here illustrated, and let enough bees follow the queen into it to fill it half full. Exclude the rest, and remove the hive to a quiet place. Those unable to enter will return to the old stock, and will go out probably as a second swarm in a few days after; while those in the new hive, being provided with a queen who cannot fly away, ought at once to begin cells and make themselves at home. After two or three weeks, or even sooner if eggs are laid in the cells, she may be removed and the efforts to supply her place will, of course, be watched with the greatest interest. Late in the season the whole colony may run out, but the observing hive will pay in entertainment and instruction, more than other stocks pay in honey.

A feeble after swarm might be treated in the same way, if one does not care to risk the loss of a first swarm.

And at any time, if one sufficiently bold and skilful can cut out a piece of comb containing eggs

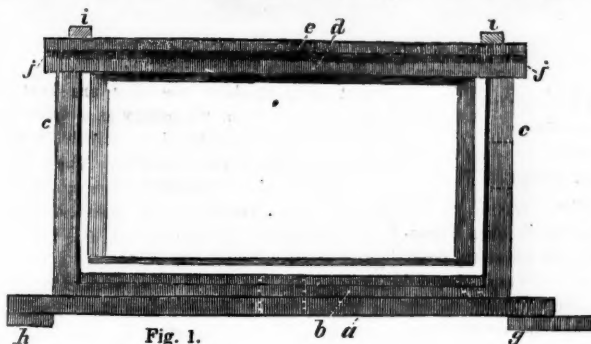


Fig. 1.

OBSERVING BEE-HIVE.



Fig. 2.

luded to in Langstroth's patented hive, in which it is intended that each comb shall be built on a separate and movable frame. Of course it is not essential to the observing-hive, but it greatly facilitates the ease and pleasure of experiments, enabling us at any moment to stock an observing hive, or to furnish it with brood, honey or comb, at pleasure.

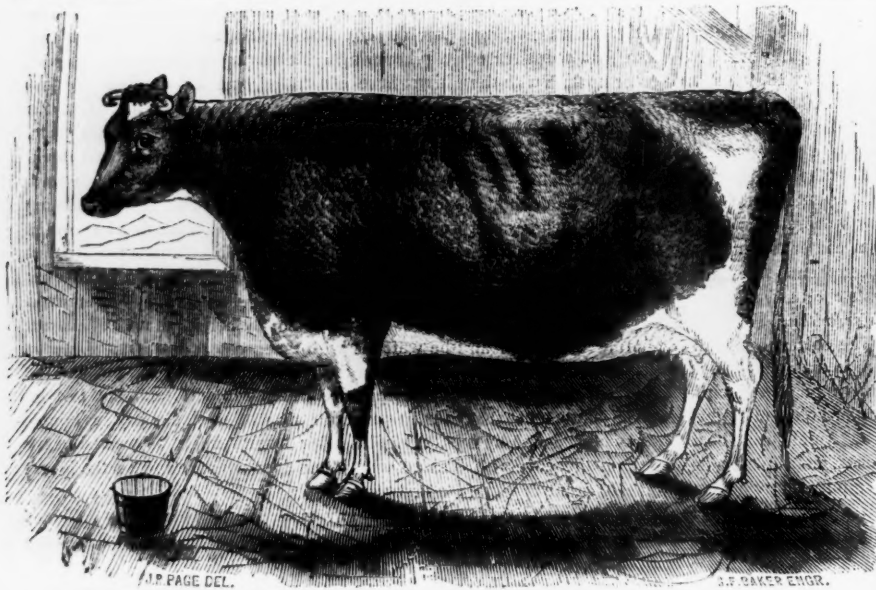
It is an exceedingly simple thing when one has Langstroth's frames and an observing-hive to match, to start a new colony, and that, without serious injury to the stock from which it is taken. A single frame containing comb, honey, pollen, eggs, brood and bees, is lifted out from the main hive and let down into the observing-hive from above. The cover is immediately put on and the entrance hole stopped. Sufficient air comes in at the ventilators to keep the bees from suffocation, and after ineffectual attempts to escape, they very soon begin to form queen cells. They do not even need to be kept in a dark place. If removed a mile or two, the entrance hole may, at once be opened: otherwise, they may be kept prisoners for two or three days, after which time they will not all desert their new locality. Before they are released, the hive may be set on a table before a window, where a curtain protects it from the direct rays of the sun, and yet the bees can come and go freely without entering the room. Sometimes it may be convenient to remove the glass of the hive, for a few moments, in order to get at the comb, or to secure the mother-bee for exhibition.

Two things are essential: first, to get a sufficient number of bees into such a hive; and secondly, to furnish them with a queen, or with comb containing worker eggs. We are loth to recommend what we have not tried, and yet we

or young brood, and firmly attach it to the cover of the observing hive, he may, by driving or smoking, get enough bees out of the common hive into it, to carry on the operations already alluded to. This would demand time and judgment, and we hardly advise any one to attempt it. With Langstroth's hives the whole work may be done in three minutes, and at the end of the season, the comb can be restored to the hive whence it was taken.

Green Corn for Summer Fodder.

As every farmer knows, there is a season in mid-summer when pastures become parched and brown, and cows fail both in flesh and in milk. Some consider this a necessary evil, against which no provision can be made, but all do not so consider it. Some farmers, as we happen to know, provide against this time of scarcity by planting corn for Summer feed. They often use the Southern yellow flat corn, manure the ground well, sow in drills three feet apart, leaving it so thick in the drill that no stalk will grow more than an inch in diameter. In this way, they secure fine, succulent feed for their stock, from the last of July to the middle of September. The cows keep in good flesh, and the butter and cheese show no abatement. This corn answers well also for dry fodder, though the difficulty in curing will prevent its general use on a large scale. The advantage of this corn over the common Northern varieties is that more of it can be raised on the same ground, and that it grows faster. Plant about the middle of May, June 5th, and June 20th, for a succession of tender feed through the Summer.



ALDERNEY COW "SYLPH."

American Cattle...IV.

(Continued from page 133.)

THE ALDERNEY, OR JERSEY.

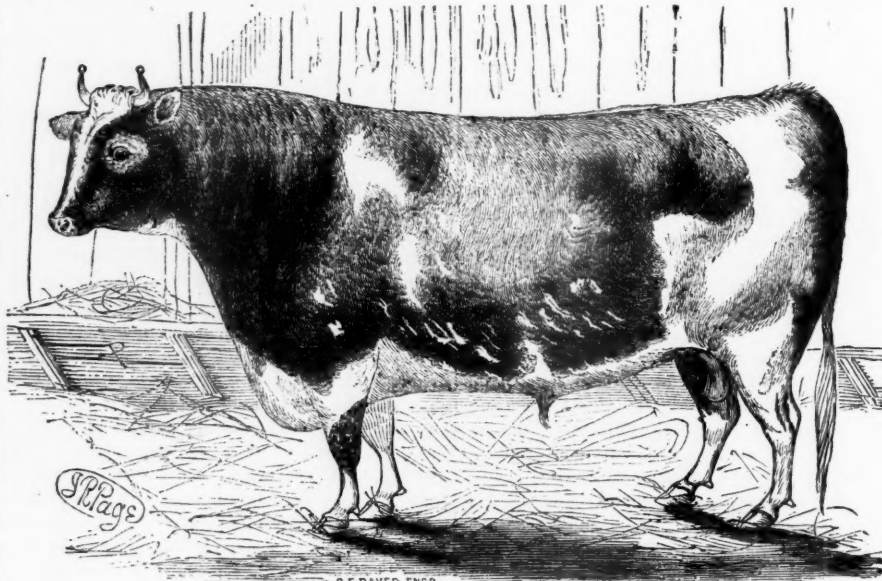
This quaint little body, of the cow kind, on her first appearance to those who have been accustomed to the fine proportions and imposing front of the Short-Horn, or the beautiful and graceful Devon, may provoke a smile of derision at her plebeian dimensions, and meek, and quiet demeanor. We shall not soon forget the outburst of a huge and brawny Kentuckian, who, in ranging over the cattle quarters of a great Western Agricultural Show, and gloating over the broad dimensions of the Short-Horns as he passed them, one after another, fell upon a quiet little Alderney cow, with her timid wee calf at her side, coming to a full halt, and throwing up his hands aghast: "Well—well—if that *their* thing ar'n't a *smasher*! If I should come across such a varmint as that in a field of mine, I'd pitch it over the fence sooner'n I 'ould a 'possum! I say, stranger," addressing himself to the late Roswell L. Colt's herdsman, whom that fine old gentleman had sent all the way from New-Jersey to Ohio to show the good people there the lacteal qualities of his cherished little Alderneys—"if you can't find no better biz'ness than tending such a critter as that, you'd better job yourself out to shucking corn on a river bottom!" and on he rolled, wondering "what corn cribs was good for, if nothing bigger nor better lookin' than *sich* as that was made to eat 'em!"

Inferior and diminutive as she seems, the Alderney is a *gem* among cows. She is the pet of the English aristocracy, who prize her creamy milk and golden butter beyond that of any other British cow, be her looks and lineage what they may. And, holding in admiration equal to any other, the grand and graceful qualities of the larger breeds, we feel bound by truth, economy, and good taste to do justice to this meek and unpretending little beast.

HISTORY.

The coast of Normandy, in France, and the Channel Islands of Great Britain, Alderney, Jersey, and Guernsey, are the original soils which long have bred that race now popularly known as the Alderney. They abound there now; and on the Channel Islands they are improved and bred with a care superior to which no breed of cattle in England itself has received. On the English

coast of Hampshire, too, they are kept in the parks and lawns of the gentry as a favorite milking cow, and considered an ornament to their pleasure grounds and paddocks. They were carried more than two hundred years ago, from Normandy, by the French settlers, into the Gulf of the St. Lawrence, and planted on the settlements about Quebec, where they are now found—rude, and uncultivated, to be sure; with colors and appearance less distinctive than their English congeners, but still rich in their lacteal qualities, and highly prized by the simple *habitants* who esteem



ALDERNEY BULL "IVANHOE."

them above all others. They have for some years past found their way to the United States in the packet ships from England, and will, we trust, long remain with us, cherished and esteemed, as a household convenience, and a thing to care for.

DESCRIPTION.

The Alderney Cow is small in size, peculiarly deer-like and delicate in head and feature; a falling, ewe neck, having little dewlap; a prominent, lean shoulder; a flat, falling rib; a sway back; bony hips; a narrow loin; lean rumps, terminating at their points with a tail rather gracefully set on. Her chest is not wide; her brisket not

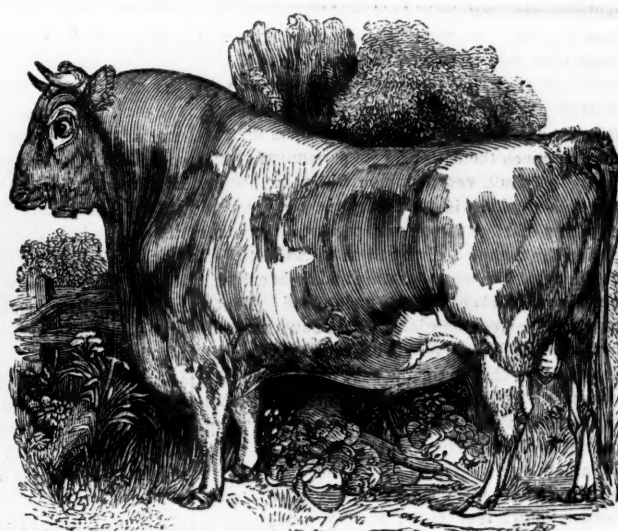
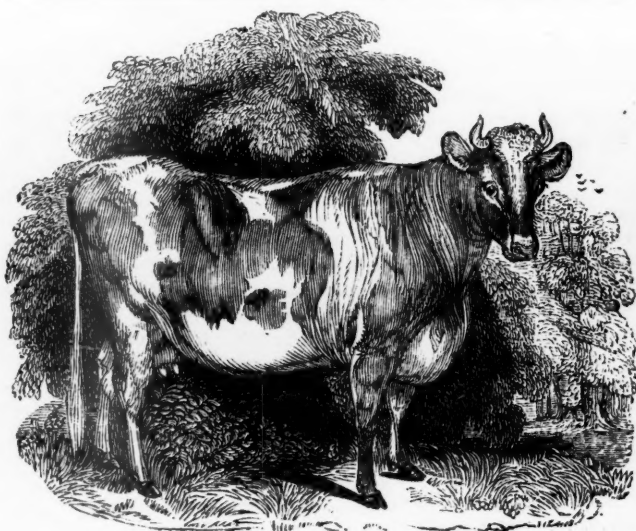
prominent; her belly rather broad for her size; her flanks not full. Yet her bone is fine. She stands tolerably well on the fore legs. Her hind legs are crooked, and her thighs lean, yet standing well apart, disclosing a large udder of remarkable smoothness, set well forward, and running well into the twist, covered with soft silky hair, and terminating in delicate, smooth, taper teats. All these points, many of them ungraceful when considered apart, yet combined, give the Alderney a peculiarly blood-like, and aristocratic appearance; showing distinctly that although she may fail in comparison of carcass with the valuable traits seen in most others we have described, she has qualities which render her quite as valuable in her own line of service. Her prevailing colors are light red, dun, yellow, or fawn, agreeably intermingled with occasional patches of white. The two cuts we print will give a better idea.

HER UTILITY

As a milk yielding cow she is altogether prized. Her milk is rich and creamy beyond any other; the yield of butter larger, and of the deepest color. The milk is not so much in quantity as it is superior in quality; yet is quite an average in the first, and much more than an average in the last, when the weight of the cow, and the food she consumes is considered. As compared with some other breeds, she is not considered as the best farm dairy cow. Her less robust constitution and figure, and the domestic and sheltered manner in which she has long been accustomed to live, have unfitted her for the hardships of common farm service to which the larger breeds have been used, and she is thus better fitted for family keeping, where but one, or few cows are needed. For such purposes, her quiet disposition

and kindly temper, render her peculiarly serviceable; and where the family cow is, as she always ought to be, properly regarded, the Alderney will be cherished and valued.

With the plastic genius of the Channel Island breeders, we find that the Alderney is as susceptible of improvement in style and symmetry as the other foreign breeds; and to illustrate the fact we give above the portraits of a cow and bull, imported two years ago, and now owned by James O. Sheldon, Esq., White Spring Farm, Geneva, N. Y. These animals took first prizes at the late State Agricultural Show at Buffalo, N. Y., and their figures, compared with those on next page,



THE ALDERNEY COW AND BULL OF THIRTY YEARS AGO

may be admired as the degree of excellence to which the race may be brought by care and attention in their breeding.

AS A WORKING OX, OR A BEEF-MAKING ANIMAL

the Alderney has less value than the English breeds which we have before described, for which purpose, indeed, he seems not to have been constituted.

The figure of the bull shows that he is deficient in the required points of a stout working ox, or a first class beef animal. Nor for those purposes is he needed. For the improvement of our common dairy cows, the Alderney bull may be profitably introduced and crossed upon them; and for many years to come every promising young one which may be dropped should be sought by those who wish to develop in the highest degree the milking quality of their herds. The cross has, as yet, been seldom resorted to in the United States; but may well be adopted by our dairymen.

Pasture Lands—Their Treatment—Hints, Examples &c.

These are among the most important elements of the farmer's wealth, and, as a rule, the most neglected, or their treatment the oftenest misapplied. The management of pastures should differ with different soils. There are some soils in wide belts or tracts of country, which are equally good for pasture, mowing grounds, or cultivated crops. Others there are which cannot profitably be devoted to any other use than grazing, by reason of their rough and stony surfaces, and these should all, in their several characters, be studied in their proper treatment.

We recollect in our frequent reading of advertised New-England farms "for sale, or to let," their merits set forth in this wise:—"Well divided into proper proportions of mowing, pasture, and plow land;" which is to say: "there are portions of the farm immemorially devoted to pasture, others to meadow, and others to cultivated crops." And such, in frequent cases, has been the wisest course where the particular parts of the farm most favored the growth of the crops to which they were appropriated. The best pastures we have ever seen never had a crop of anything upon them but grass, or perhaps a first single crop of wheat, rye, or oats, which was taken from the ground when seeding down to grass after clear-

ing—and they have now been in pasture for half a century, and upwards. There are various reasons for this successful growth of the pasture grasses, numbering, perhaps, a dozen varieties, and usually called the *natural* grasses. The vegetable decomposition of the fallen leaves for centuries, with the wood of the roots forming the top soil, holds the grasses firmly, and retains them with a tenacity which cultivated lands will not do, and the firm hold which the roots have taken making the stalks fine, thick, and rich, giving the grass a better flavor and a richer nutriment than newly sown seeds, which, although ranker in growth, are less matted in the soil, thinner, and more watery, and less nutritious in their support to the animal system.

Therefore, where land is *natural* to the grasses, pastures should scarcely, if ever be plowed. If plowed, and the original grasses be killed out, as they assuredly will be if the succeeding crops be well cultivated, no new seeding will give them the solid growth, enduring vigor, and sufficient variety which they had before, until many years afterward. The old pastures—if properly treated—cannot be benefited by plowing. If run too close, they will fail, of course; but the correct method of their restoration is to let them rest by keeping off the stock a season, or a part of a season—doing this in the earlier part is best—and giving them, if the land be thin, a top-dressing of some stimulating manure, and a sharp combing with the harrow.

There are other lands stretching over broad tracts which will not hold the grasses of any good kind, *permanently*. They have not the necessary *humus*, or vegetable material in the soil, either in decomposition or otherwise, to give them continuous sustenance for long periods of time. Such, therefore, require frequent plowings, and re-seeding with clover, timothy, orchard grass, and other rapidly maturing varieties, but not enduring, yet yielding well for a temporary purpose. Such are not *natural* pastures, and are unreliable as permanent stock farms. These soils are usually sandy, gravely, and light in texture. Clays of almost any kind are good grass lands, but when well fixed in pasture or mowing grounds, they should rarely be disturbed, and then only in desperate cases—such as a complete running out, or failure to yield.

We have an instance at hand, for illustration: On our farm lies a broad field. Fifteen years ago a part of it was in plowed crops, which it grew

vigorously, and well, and had been alternated for twenty years with such crops, and mowed grasses. Another part had never been plowed—both the same soil, a heavy clay loam, rich, and comparatively new. We laid down the plowed land under a heavy seeding of timothy, and red clover; mowed good crops of hay from it for two or three years afterward; then took away the division fence between it and the old pasture adjoining, and turned it all out to pasture together. The old pasture started earliest in the Spring, and held out later in the Fall. The cattle and sheep which fed upon it would bite it into the ground all Summer, while the newly seeded was rank, and apparently much better. The sheep, particularly, loved the old turf, and fattened better on it than on the new. It was evidently sweeter and more nutritious than the other, and matted over the ground like a carpet, while innumerable bare spots of a few inches area could be seen throughout the surface of the freshly seeded. The difference was, that the artificial seeds had not yet got possession of the new piece, while the old, in addition to the timothy and clover which it held, was intermixed with white clover, blue-grass, red-top, and other natural plants, mixing in, and giving a palatable variety to a full bite of herbage. It was five or six years before the last seeded ground caught up with the other in a full surface of grass, and to this day the stock like the old pasture best.

Now, if we choose to do so, by shutting off the stock, we can cut heavy crops of hay on these pastures, but yielding so many varieties of grass, they ripen unequally, and the hay is of inferior quality to that cut from one or two varieties mainly; hence we do not *mow* them.

On our Atlantic borders, and in parts of the New-England States, we know of numerous tracts of land so poor—although as *natural* to the pasture grasses as to any other valuable crops—that they grow little but five-fingers, ferns, and other worthless weeds, or low shrubs. Sheep are the best stock to put upon such, and some are too far gone for even them. Plowing, therefore, is necessary, indeed indispensable, where their surfaces are free enough from stone or moisture, to admit of it. Some sort of stimulating manure should also be applied—not much matter what, so that it has the elements of fertility about it. If any vegetable *humus* still remains in the soil, grasses will hold in it. If not, a succession of clover crops plowed under will furnish that *humus* so that the grass

will ultimately retain its hold, and become permanent pasture. But such pastures should not be cropped closely, at first. They should be fed lightly, or not at all, until the roots have become well matted into the soil; and if the growth of a season or two be suffered to lay and decay upon the surface, so much the better for its permanent good.

Another fault, very common with many people, and rather taking in its theory is, the frequent changing of stock from one pasture to another during the Summer, giving them "a fresh bite," on the idea that "change of pasture makes fat calves." Such is an old adage not half understood. That a change of pasture, absolutely eaten down to nothing, into one full of grass is beneficial, no one will deny; but a change for the sake of a change is all nonsense. Animals love their homes more than their changeable-minded masters are apt to appreciate. They never like to leave an old range for a new one, so long as the old range gives them a fullness of stomach, and every good stock-keeper knows that fresh, watery grass scours animals when newly turned upon it, while the well-ripened, solid grass of the old fields keeps them regular and healthy. That a change of food is desirable to cattle we know, but that change should exist in the food of the same field, not a necessity for the change in several different fields.

We have a large pasture, containing as follows: A low slip of marsh, yielding a coarse, long, watery grass, incapable of drainage from bordering a river; a tract of second bottom, not natural to the clovers, but full of red-top, fowl-meadow, and other rank herbage; a portion of dry upland, where the clovers, timothy and blue grass abound; and, finally, a belt of open woodland, where grass freely grows, with some succulent weeds. These tracts are all within the same inclosure, and have been used by us for years past, as a common pasture for horses, sheep and cattle. The sheep prefer the dry ground, mostly, but oftentimes go down and crop the second bottom and woodland. So with the horses; but the cattle, every single day during the Summer, plunge into the marsh land and gorge themselves with the coarse water-grass, particularly in the mornings; then on to the uplands, where they lie and ruminate; then into the second bottom; after which, another rest; and their late afternoon meal is taken on the highest land they can find. Sometimes they vary their diet as to time, but such is the round, in one way or the other, that they take, and all the grounds are fed off in turn. No man likes roast beef and plum pudding in constant succession. He occasionally prefers a dinner of boiled pork and corned beef, with coarse vegetables and brown bread, and a hearty Indian pudding to whip syllabubs or custards. So with the lower grazing animals; variety with them is the spice of life.

A word before we close, as to the economy of partitioned pastures. They require many fences, to which, in farm management, we are decidedly opposed. If we had a cropping farm, where plowing was the chief source of our productions, we would prefer that such crops would grow within a single inclosure. Our meadows should all be in one. And in pastures, we would have but two, or three at farthest. It is not in the change of pastures that we derive benefit to our stock; we suffer more frequently by over-feeding—too much stock for the land. We have known a whole herd of cattle abominably poor throughout the season, although their pastures were changed once a fortnight. We have known other stock, as fat as may be, that only ranged one field an entire season. Our best graziers, and our most experienced dairymen prefer but one range of pasture for their bullocks and cows—separate

of course, when both are kept—for the Spring, Summer and Autumn. If mixed farming, or cropping is a part of their practice, the stock will be admitted, as occasion may require, for gleanings the surplus food in the grain fields, after the crops are off, or to consume the after-math of the meadows, but the pasturage is a permanent and continuous affair.

In England there are large dairy and grazing districts, where the ground has not been broken by the plow since the Conquest, that any body knows of, and their owners would not have them broken at any price, so valuable do they consider an old turf. In many parts of America, fields of meadow and pasture have so lain ever since the land was first cleared—more than two hundred years—the most valuable mowing and pasture they have. So, in constant use have been plow lots. An old farmer, upwards of seventy years old, once showed us a lot which he said had never been laid down in grass more than one year at a time, during his life-time, nor in that of his father before him, and that was over a hundred years, so natural was it to grain and vegetables; but it had had good culture, and abundant manures. The proper application of land to the right purposes, with our increasing facilities for reaching the markets, are learning us sound lessons in many branches of agriculture, and division of labor; not among the least of these, are the proper understanding and treatment of our pasture lands, on a small scale even, as well as on a large one.

Reapers and Mowers, &c....V.

[Concluded from page 149.]

To the Editor of the American Agriculturist.

In my first four numbers, I discussed the Trial of Reapers and Mowers by the United States Agricultural Society, at Syracuse, last July, and the Report of the same. In order to complete the subject, and further to show how little dependence can be placed upon reports of Judges at these "Great Trials of Implements," so called, I now propose to refer to the Trial of Mowing Machines by the Massachusetts Society in July, 1856, for a prize of \$1,000, and compare its decisions with that of the one at Syracuse. During the Massachusetts Trial, there were three Judges, and they subjected the machines to a much longer and more severe test than was done at Syracuse. In this one respect, (greater amount of work,) the trial was a much better one than that at Syracuse; but to make amends for this, the decision was the very worst which could have been given on the occasion, as I shall proceed to show.

There were ten entries to begin with, but some withdrew previous to the trial; others were thrown out while it was going on; leaving at the close only four competing machines, viz: Ketchum's, Manny's, Allen's, and Henderson's, or "Heath's," as they designate it, which was known as "Caryl's," at the Syracuse Trial. The three Judges in this case did not subject the machines to the test of the dynamometer, nor indeed to any other mechanical or scientific test. Being shrewd Yankees, they had a more simple, and I dare say (to themselves) more satisfactory method of resolving knotty points, and that was upon the principle of guessing!

1. They guessed, that the "Heath," alias "Caryl," machine was less liable to clog than any of its three above mentioned competitors.

2. They guessed, that it "very evidently required less power of draft."

3. They guessed, "its cutting apparatus as very much superior."

4. They guessed, "in other important features, it is equal to the other machines."

Lastly, with solemn gravity, not unusual with distinguished dignitaries on like occasions, they guessed, after having used the word "important" no less than three times in rapid succession that:

"We, therefore, unhesitatingly, confidently and unanimously, express the opinion that the Heath machine, entered by D. C. Henderson, is entitled to the premium of one thousand dollars."

Was there ever anything more scientific, emphatic, or autocratic! For further particulars I beg to refer the reader to the Massachusetts Report itself. Pages 297 and 8.

Now let us turn to the Trial of the United States Agricultural Society, at Syracuse, where this famous thousand dollar prize machine is entered as "Caryl's," and let us hear what the eighteen Judges on that august occasion have to say on these various *five points*, guessed out so "unhesitatingly, confidently and unanimously," by the three Massachusetts Judges. I quote from the printed Syracuse Report.

1. *Clogging.* "The reel worked ill and the machine clogged. Mr. Caryl (Heath) therefore abandoned the lot and notified the chairman that he was no longer a competitor." Page 73.

This is in other words, as I understand it, equivalent in a delicate way to ruling out his machine, as unworthy further trial.

2. *Draft.* By careful trials with the dynamometer, they make the Caryl (Heath) machine show 115 lbs. more direct draft than the Allen machine, and 30 lbs. side draft—the Allen showing no side draft whatever. The Manny (Wood) 88 to 93 lbs. less direct, and 27 lbs. less side draft. The Ketchum 81 lbs. less direct, and 26 lbs. less side draft. Pages 75 and 76. According to the opinion of the Judges, page 51, this would make a difference in favor of the Allen and against the Caryl (Heath) machine, in a day's work of ten hours, equivalent in round numbers to 5,220,000 lbs. That is to say, the team every day of ten hours work, in cutting over the same ground and the same quantity of grass, would, attached to the Caryl (Heath) mowing machine, be obliged to drag five millions two hundred and twenty-two thousand pounds more than if attached to the Allen machine; and so relatively of the Manny (Wood), and Ketchum!

Yet the Massachusetts Judges had the assurance to guess this Caryl (Heath) machine the lightest draft of all its competitors. Whether correct or not, I leave the wise men of the East and West to decide the matter between themselves.

3. Of the "cutting apparatus," the Report says: "It requires great thickness of blade to prevent them from bending up when dull."...."As soon as the knives are dull, or a joint, or rivet loosens, it must necessarily clog and work badly." Pages 45 and 46.

4. As to other "important features," the Judges do not seem to be favorably impressed in regard to its cam motion, as they say, "There is a great loss of momentum in this machine."...."The increased weight consequently augments the momentum and wastes force, hence the great thumping noise and waste of force."...."The open space between the cams are liable to become covered and filled with earth and to wear the rollers," &c.

Upon the strength of that thousand dollar award, the patentee forthwith proceeded to dispose of rights to various manufacturers counting largely on their future gains from the purchase. But what was the result the following season? Disgrace at the Trial of the United States Agricultural Society; and not a single purchaser of the machines I

have yet heard of, satisfied with their performance. Thus there were great losses to the manufacturers, and greater disappointment to the farmers.

It is astonishing to me that the manufacturers and farmers of this country will submit with quiet impunity to such a waste of their time and money.

I shall now leave them to apply such terms as they think proper to the proceedings of the various Judges and Committees under review in these papers.

H. L.

Syracuse, May 3, 1858.

The New-York "Central Park."

Our readers have heard ere this that, after all the talk about it, we are really to have a great Park in this city, and as it is to be one of the finest things of the kind on this Continent we think they will be interested in seeing the general plan for laying it out, prepared by Messrs. Calvert Vaux & Frederick L. Olmstead, and just adopted by the commissioners. To understand the location of the Park it may be well to describe the city and Island briefly.

Manhattan Island upon which New-York city stands, is some 13½ miles long from south to north, and is bounded on the west by the Hudson river; on the east, by the East river (or outlet of Long Island Sound) which at the south end of the Island unites with the Hudson river forming the magnificent New-York Bay or Harbor. The north end of the Island is separated from the main land of Westchester County by a stream connecting the East and Hudson rivers, and called in its eastern portion the Harlem river, and in the western part the Spuytenduyvil Creek. (These two names are given respectively east and west of the point where the tides from either side meet.)

From its southern pointed end, the Island widens to nearly three miles, and is gradually contracted again further north. The main part of the "built up" portion of New-York city occupies about five miles of the south end of the Island. The heaviest business portion is upon the south end—1½ miles being almost wholly occupied with mercantile establishments, which are also more or less scattered over the whole city.

For about two miles up from the south end, or Battery, the streets run in almost all directions, with one main street called Broadway (not very broad) running a little east of north, nearly through the center of the city, in a straight line from the Battery, 2½ miles, to Tenth street, where it bends to a direct north course, cutting most of the regular streets and avenues at an angle.

About 2 miles from the south end, the streets begin to be regular, and consist of broad Avenues running north and south parallel to each other, with parallel streets crossing the avenues at right angles and extending from the east to the west or Hudson River (usually called "North River.") The longer "avenues" numbered from east to west, are named I, II, III, IV, V, and so on to XI and XII. These avenues run nearly north and south—or a little from southwest to northeast. The figures at the bottom and top of the accompanying engraving show the Vth and VIIIth avenues, and the place of the intercepted avenues VI and VII. It will be seen that the Park lies nearly in the middle of the Island from east to west, that is midway between the Ist and XIIth avenues.

As before stated, the streets run nearly east and west across the avenues. Portions of the streets are shown on either side of the Park. Those streets running east and west are numbered 1, 2, 3, 4 &c., from south to north, beginning about 2 miles from

the south end of the city. It will be noticed that the Park is bounded on the south by 59th street, and on the north by 106th street. The south end of the Park, (59th street) is very nearly five miles from the Battery or south end of the city. [We shall have quite a journey to get from our office in the south part of the city, to the Park for an afternoon's stroll.] There are some twenty cross streets to the mile, so that the Park, from south to north, (59th to 106th streets) extends across 47 blocks, or about 2½ miles, and is a little over half a mile wide. It contains, therefore, in the

laying out of the Park. The walks, drives &c., are in the main indicated. The four business avenues running through the Park to connect the east and west sides of the city, at 65, 79, 85, and 97th streets, are intended to be chiefly underground, so as not to interfere with the walks or drives, or the general appearance of the Park itself.

The main Entrance is at the southeast corner, from Fifth Avenue, from which a broad carriage road winds along on the eastern side, and back on the west side, with several outlets. This will give a continuous drive of six or seven miles, during which can be seen the main features and points of interest in the whole Park. The ground is uneven, and naturally varied with elevated points of land, and rocky bluffs, with depressions or hollows. These admirably adapt it to the purpose for which it is intended.

There is a considerable variety of native trees still standing, to which it is proposed to add many others, so as to present to the visitor all the trees as well as shrubs and plants indigenous to this country, or all that will grow as far North as this latitude. A conservatory of plants is also provided for.

The Parade-ground, on the southwestern side, will contain about 25 acres. Then ample playgrounds are to be reserved, one in the south, one in the middle, and one at the north end.

Numerous shady walks and promenades, groves, &c., will be arranged over the whole Park. One beautiful feature will be the great number of evergreens to be interspersed, here in single specimens, and there in groups, giving the whole a cheerful aspect throughout the Winter season.

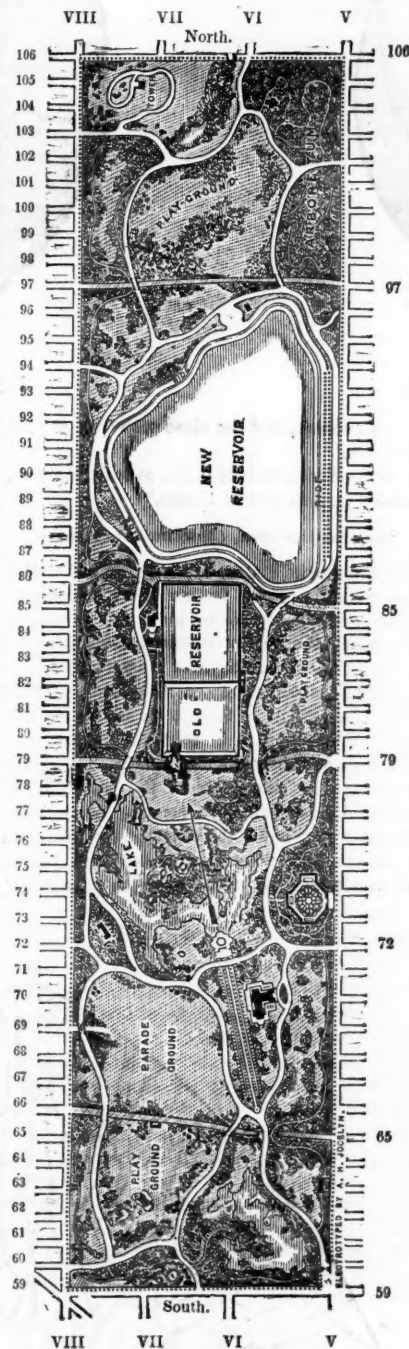
The laying out and fitting up of these splendid grounds will be pushed forward vigorously, though it will be many years before the work will be completed. It will be but a brief period, however, before the GREAT CENTRAL PARK will be the leading object of interest in the Metropolitan City of the Western Continent, and will of itself be worth a pilgrimage to see, study—and enjoy.

The Ailantus for Prairies.

We can hardly answer the inquiries of E. L. Watts, Lasalle Co., Ill., and others, as to the probable value of the Ailantus for Prairies. This tree has not been in very high repute in the Eastern States, the two principal objections being its offensive odor when in bloom, and its tendency to spread beyond desired bounds, both by root sprouts and the scattering of its winged seeds. Its vigorous propagation would hardly be considered an objection in localities where there is such a scarcity of trees as on the prairies. We do not esteem the odor of the flowers so great an objection as many have done; it lasts but a brief period, and would never have been greatly heeded had not people ran wild in planting them in needless profusion directly around and almost within their dwellings. As a shade tree they are rather late in leafing out. At this date (May 17), they show no leaves, here, while the maples have put on their full mantles of green foliage.

The Ailantus is not so hardy as to be reliable north of latitude 43°. It is a very rapid grower, and even we living upon the prairies South of 43 we should give this tree a trial, but not go largely into its culture. The seed may be obtained of our regular advertisers, Thorburn, and Bridgman. It may be sown at almost any time, best perhaps in March, April or May.

Good nature, like a glow-worm, sheds light even in filthy places.



neighborhood of 700 acres. An idea may be formed of its size by imagining it cut across into seven 100-acre-farms, each being half a mile long east and west, and about 100 rods wide north and south. This, however, is but little more than one-eighteenth part of the whole Island, which contains some 20 square miles, or nearly 13,000 acres. The engraving gives a pretty clear idea of the



Fig. 1—OSAGE ORANGE BRANCH.

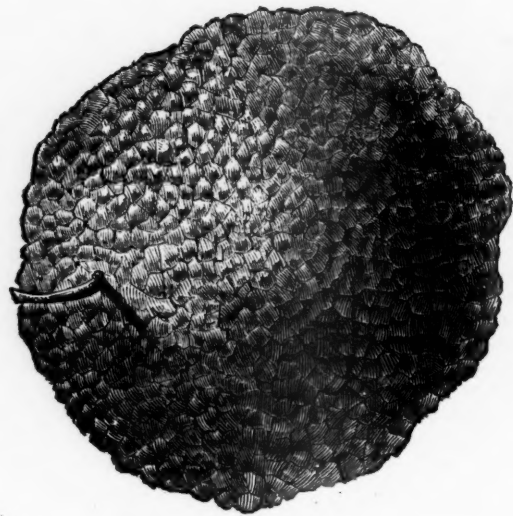


Fig. 2—OSAGE ORANGE FRUIT.

Hedge Plants.

It cannot be denied, that in the old feud, *Fences vs. Hedges*, the champions of the Hedge carried the hearts of the public with them. All poetical feeling, and the sense of the beautiful speak clearly in favor of the green living wall—the home of the birds and of wild flowers. Gladly would we dispense with wood-fences, leaning, tottering, decaying lines of tired-looking posts, strung together with moss-covered rails; gymnastic schools to educate your own and your neighbor's stock in sundry arts of hoof and snout, to leap over, and root under, to slip a "rider" or let down a "bar;" we certainly should never have discovered one-half of the talents of our *critters* if it were not for the old rail fences.

An appeal is made to our pockets too. Curious chaps figure out the cost of fences, until actually it would seem that the only obstacle to universal wealth and happiness among us farmers, is the waste of labor and money in making and repairing our fences. One hundred and fifty millions of dollars are annually expended by the farmers of America, for sustaining the fences, says one calculator; and ten millions by the farmers of New York State alone, every year!

We believe that at least a small per centage of this outlay may be saved by substituting hedges in some parts of the country; and although no one plant, in our opinion, is of universal adaptation, we propose to give, in this and the next number of the *Agriculturist*, some illustrations of those plants most likely to succeed in this country.

The qualifications of a good hedge plant are:

First—An ability to withstand the greatest extremes of heat and cold, in the latitude where the hedge is to be grown. Many plants which bear well the frosts of Winter, lose their leaves, or are checked in their growth by severe heat or drouths.

Second—It must grow rapidly when young, and have great longevity, not subject to disease or the attacks of insects.

Third—It must bear well the oper-

ation of pruning, and the close crowding of the hedge-row.

Fourth—For an outside fence, at least, it should possess "an armature of thorns."

THE OSAGE ORANGE, (*Maclura aurantiaca*).

For the middle States, say south of 39°, and at some points a little further north, the Osage Orange, *perhaps*, approaches more nearly than any other plant the perfect standard, though, as we showed in the *Agriculturist* of August, 1857, it is not to be depended upon generally, north of 40°.

Fig. 1 represents a twig with leaves of this plant. The leaves are about 3 inches long and 2 wide, of a bright, shining green. The spines are produced in the axils of the leaves. The fruit (fig. 2), from which its common name is derived, has very much the external appearance of an orange, and when ripe is of a rich yellow hue, rendering the tree quite an ornamental

object; but it is not eatable, being of a tough fibrous character, and quite insipid.

The plant is *diœcious*, *i.e.*, bears the male and female blossoms on different trees—the female tree producing the larger fruit, with perfect seeds. The male plant is said to produce smaller fruit with abortive seeds.

The wood has great hardness and elasticity, and being used by the Indians for bows, is sometimes called "Bow-wood," or *Bois d'Arc*. The sap in the young wood and leaves is of a milky character, and, according to Loudon, contains a similar gum to the India-rubber, or *caoutchouc*.

The cause of many of the failures to produce a good hedge with this plant, is undoubtedly the want of the proper attention to the pruning. Warder, in his new work on hedges, gives us the proper shape for a full-grown hedge, the one represented in fig. 3. The form of the pyramid, or rather of the Gothic arch, can only be secured by

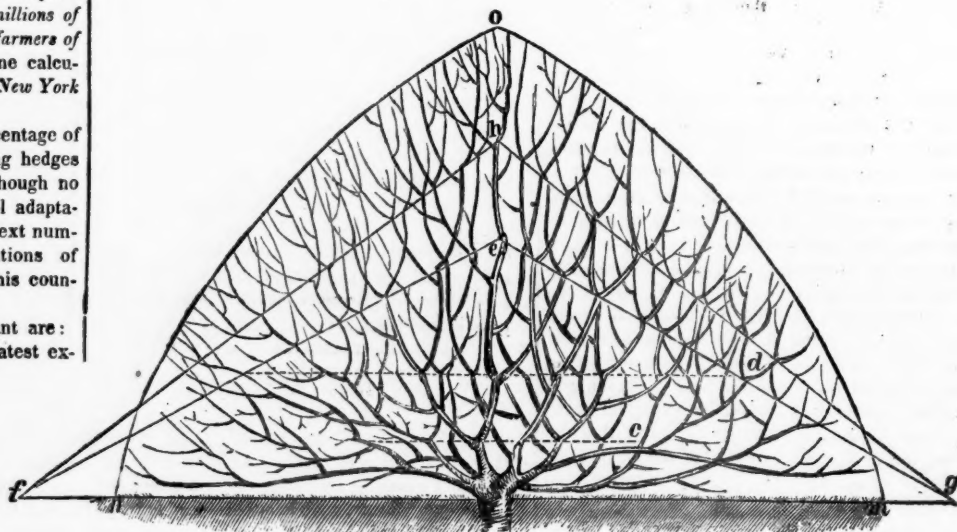


Fig. 3.

Section of a well made Hedge. The line *c*. shows where the hedge is to be cut in June of the 2d year; *d*. line of cutting in the Spring of the 3d year; *f*. *e*. *g*. in June of 3d year; *f*. *h*. *g*. in June of the 4th year.

the most severe pruning when young. He advises that the first year's growth, after the plants are set in the hedge-row, should be cut back the next Spring, nearly or quite to the ground-line or collar of the tree. At the Summer pruning, performed in June, the plants are mown off with a horizontal cut (so as to leave the lowest lateral branches) 4 or 6 inches above the Spring cut.

At each semi-annual pruning, a height of about 6 inches is gained, and the horizontal is succeeded by the pyramidal shape as represented by the lines in the engraving. This system, undoubtedly the best one, is applicable to all deciduous plants.

HONEY LOCUST, (*Gleditsia triacanthos*), FIG. 4.

This plant, which gives considerable promise of success, is a native of several of the Western States, Ohio, Kentucky, &c. It is perfectly hardy in Summer and Winter. The difficulty with this plant has been, that it bears the requisite crowding with evident impatience, and being, in its best estate, some 80 feet high, is sometimes killed by the attempt to reduce it to suitable dimensions for the hedge.

Fig. 4 represents a young, vigorous Honey Locust; its formidable thorns covering even the older wood of the trunk and branches. These thorns, shown more distinctly in fig. 5, often grow to be more than a foot in length, with lateral thorns of six or eight inches. Having had some experience of the character of these "weapons of defence," (in Western pasture fields, not in orchards) when a bare-footed urchin, we should rest in perfect composure were our pear-orchard and vineyard surrounded by a hedge of *Gleditsia triacanthos*. No biped or quadruped marauder would dare its



Fig. 5.

thorns. It bears clusters of crooked pendulous pods, 12 to 15 inches long, containing hard, bean-shaped seeds, imbedded in a pulpy substance, which is very sweet and palatable, at least to the juvenile taste. Dr. Warder recommends setting this plant three feet apart in the hedge-row, and attributes the failures with it to too close planting and subsequent neglect of trimming. From the very start, the Honey Locust hedge should be cut back to within 2 inches of the ground which will cause it to throw out numerous shrubby branches and counteract its tendency to form trees. All strong shoots having a tendency to over-top their neighbors, should be headed back as soon as discovered.

The subsequent pruning is performed as recommended for the Osage Orange, fig. 3, and should be even more promptly attended to than that plant. William Reed, of Elizabeth-town, N. J., who has had twenty years' experience with this and other hedge-plants, says he is satisfied that the Honey Locust is the best for Farm Hedges, being perfectly hardy, a rapid grower, easily kept,

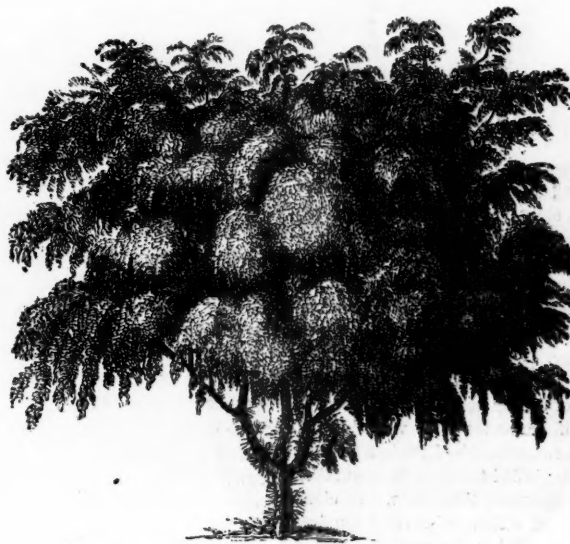


Fig. 4—*GLEDITSCHIA TRIACANTHOS*—HONEY LOCUST.

and from its thorny character, a most efficient barrier.

The young plants of the Honey Locust are, in



Fig. 6.

most localities, easily and cheaply procured of the nurserymen, and when this is the case, few farmers will find it convenient to raise their own seedlings; but where they are not obtainable, they may be raised from the seed. The great difficulty in this process is in causing the seed to germinate. By pouring over them when they are spread thinly in a shallow vessel, *boiling water*, and allowing them to stand in a warm place a few days, they may be planted in the Spring with a certainty of having good strong plants above the ground in a fortnight.

The foliage of the Honey Locust (fig. 6) has a beautiful feathery, graceful character, and the male and female blossoms, like the *Maclura*, are borne on different trees.

Destruction of Forests.

Having given our plea, once and again, for the preservation of the forests, we now wish simply to record a confirmation of our views, which we find in one of the daily journals. It appears that a learned Frenchman, M. Brequeril, of Paris, has lately published an elaborate treatise on the influence of forests, treating the subject both historically and scientifically. His conclusions are, in brief: "that the forests act upon the climate of a

country as frigorific causes; that they also act as protection against winds, and as a means of preserving living springs; and that they prevent the degradation or wearing away of the mountains. They also act as protection against the communication from place to place of contagious diseases."

How to get up a Country Park.

"All work and no play," according to the old adage, "makes Jack a dull boy;" and as we have given our readers, since the first of January, a tolerably thorough drilling into the *labors* of rural life, we propose to change our discipline for the moment, and enjoy a trifle of *recreation*. We are the more inclined to this from receiving a communication from a distant subscriber, detailing his efforts at Park making within a few months past; and as it may impart a useful hint or two to such of our suburban readers as now and then make an attempt in that line, we give it as written, with the heading as above:

To the Editor of the American Agriculturist:

I learn by the New-York papers that your city government is getting up a great affair in the way of a Park, containing some eight-hundred acres of what is now flat, hilly, rocky, sedgy, peaty, mossy, swaly, woody—in fact, all sorts of land, besides sundry puddles of water, with which the Island of Manhattan is blessed in so compact, and restricted a compass. It is going to cost, I hear, several millions of dollars for the land, and ever-so-much more to lay out, engineer, cut-and-fill, plant, water, and road it. A wonderful thing, no doubt it will be, when finished—worth all its cost to the swarming population of your great teeming town, and a future model, I trust, in its extent and perfection of taste to the parks of other large American cities which are to follow it.

There are some private parks in our country, too, but not half so many as there ought to be; and having a little inclination that way, and a right spot for it, your humble servant has lately tried his hand in an attempt at one on his own account. Know, therefore, Mr. Editor, that some twenty years ago I purchased in the neighborhood—say half a dozen miles distant—of a thriving town, far away in the country, nearly a thousand acres of wild land. It was not all woods, exactly, for half a dozen families of those valuable creatures called "Squatters," had there pitched their tents—cabins rather—at a much earlier day. They

made little clearings, inclosed small patches of ground for their corn and potatoes, and disfigured it so that when it came into my hands it was about as rugged and unprepossessing a bit of real estate as one would care to look upon; its redeeming qualities being a fine natural surface, an excellent soil, valuable and stately timber—where it still stood—a long stretch of clear, broad, navigable river passing in front, and a charming view for miles distant, embracing in its scope, the vigorous young town aforesaid. It was a natural resort for the Bald Eagles, too; where they had for generations lived, and bred their young, and between them and the Squatters, the most harmonious relations seemed to exist, without harm of one to the other. Of a part of this "Squatter" territory, having dispossessed the "Sovereigns" by the purchase of their "betterments"—what a misapplication of terms for such vandal spoiliations as they had committed!—I made a farm, by cutting down their girdled trees, clearing out their brush fences, straightening their lines, and clearing up the land to the extent of several hundred acres, and have occupied it for agricultural purposes ever since. Of this, however, I am not going to discourse.

But the ruggedest part of the whole lay further along the river, worse mutilated than the other which I first took in hand; and as I had no particular use for it, I let my cattle range over it in Summer; while all the neighboring bipeds, in search of holiday amusement, resorted thither for the excellent fishing, found along the shores and in the stream opposite, and for gunning, and other vagabond recreations, usually, however, in a quiet, respectable way. It has a long, sandy beach of half a mile, lying in front, wooded down to its shore; just back of that a terraced bank, with a stretch of old pasture land embracing an occasional clump of Elms, Beeches, Oaks, and Maples, which the Squatters had accidentally, or lazily left upon their "improvements;" and a dense forest in rear, as a finishing back ground—in short, a delightful spot to "loaf" of a lazy, sunny, Summer's day. How many times I have envied the sleepy loiterers as they lay along that breezy beach, under the shade of those grand old trees, their boats swinging lazily by the shore, and wished that I could be as happy in the indulgence of such idleness! But I had no taste that way, and for years gave up the ground to them, and the cattle—or to the cattle, and them, rather, and reserved it, Micawber like, for "something to turn up" at one day, or another. Well, the time finally arrived, and during the fine open weather of the past Winter, I took the matter in hand, and in an incredibly short time—to Park makers—cut out, not planted, a grand affair of a hundred acres or more, of as agreeable recreation grounds as one could ask for—in a new country. There is wood, grass, water, bathing, fishing, yatching, rowing, all to heart's content, with a steamboat wharf to land at, and within half an hour's access to eighty-thousand people.

But, you may ask, Mr. Editor, how has this park been so readily accomplished, an old Squatter's settlement been so easily converted into a finished piece of shade, and pleasure? I'll tell you. Squatters do no sort of improvement by calculation. They move by chance, and accident. When they attempt to cut out a clearing, it is never done by straight lines. They cantle in here: they hack out there; if there is a swamp hole in one place, they fall the surrounding tree tops into it to get rid of further trouble, and so leave it; a clump of "old settlers," as they call the big trees, in another place they shy round it, not loving heavy chopping; and thus, after occupying their

premises awhile, and then abandoning them to the recuperation of nature, the trees and grounds oftentimes take those features which, when put under the action of a discriminating mind, yield the very thing you want, and which, perhaps, with all the study you could give it, under a state of nature, you could not succeed half so well in accomplishing. So with this place. There was a broad, open space of old turf ground a little way along the shore; then a clump of tangled young wood, underlaid with a thick growth of bushes; beyond, a point of heavy timber running out from the forest into the open ground; a few scattering, stalwart old elms, oaks, and maples, which being left out alone in the clearing, had thrown out vigorous young shoots far down their originally tall, naked trunks, and now gave dense masses of shade all around them.

The edges of the deep woods, too, had become feathered down to the ground with the younger growth springing up beneath them, and covering up the bare trunks which new clearings are apt to show so repulsively, and thus prepared them for the hand of a skillful improver. Yet, all was wild, lying waste and unattractive. There were old frog-holes and swales, which had lain since creation, and where the frogs had piped in shrill concert every Spring since Noah's flood, now full of decayed tree tops that had been filled into them to save chopping up at the time of clearing. Taken altogether, it was about as pretty a mess as one would care to go into, who did not understand quite well what he was about, and what he wanted to make of it. Thousands of other just such spots, *land-wise*, lie all over the country.

Now, for the way of doing it: I first took a couple of good ditchers out to tap the frog and swamp holes, and drain them into the swales; half a dozen good woodsmen, expert in the use of axes and bush-hooks, and with a light axe in my own hand, and each a heavy one in theirs, we entered the grounds. For the first few days we attacked the brush-wood, cut it close, dragged it out on to the open ground, where it could be burned without scorching the standing trees, and piled it. Then, with my own axe in advance, I marked every bad, imperfect tree, or sapling that needed removal, while the men followed and cut them away, and chopped them up for clearing out. Thus, open groves of fine young second-growth were made of thickets and almost inaccessible brush-wood. Spectral old trunks of dead, standing trees were cut down, and chopped into "logging length" for hauling out; and gaunt, crooked, ill-shaped things felled, to make room for the thrifty, and handsome ones. In short, whenever we saw a thing which required removal, it was done up thoroughly, and after a few weeks' work, what looked so wild, rampant, and neglected before, now showed as if the advance guard of ruin itself had rushed in upon it. There lay the slaughtered wood, and the hacked-up brush and tree tops, stretched out upon the ground, and sprawling over the grass, higglety pigglety, as if the very genius of havoc had made a descent upon it, scattered hither and thither over many broad acres of ground, with huge old stumps here and there between, adding to the desolation; a nice specimen of "improvement," to the eye of a pleasure-ground admirer!

Such was the first series of labor. Next, two solid yoke of oxen went out with us to our daily toil. The brush piled, and out of the way, we hitched to the worthless logs and rubbish which the fallen trees had made, and hauled them together for burning; and what was fit for fire-wood we laid aside for that purpose. Any quantity of old decayed trunks and tops lay half

buried under the leaves, and in the water-holes now dry, whole *quarries* of them—all these we hauled out one after the other, and made the ground clean throughout. The field stumps—those of the trees long ago chopped away—were pulled out and piled for firing, and every combustible thing taken out from among the standing trees. A few days of dry weather, and fire was applied to the heaps of dry rubbish. A jolly time we had of that, lasting a few days longer in "picking up," rolling the old charred logs closer together as they burned away, and "branding." After this, numerous blackened spots of burnt ground and ashes remained, which we scattered away with our spades, and sprinkled grass seed over, and this is now springing up to clothe the earth again, fresh and vigorous. A person knowing the place last year, would scarcely recognize it now, so changed for the better. The features are all renewed, its face washed, hair combed, and brought into comeliness and beauty, at a cost not exceeding two or three hundred dollars; and here is a Park, comprising all the main requirements which belong to a finished one of the kind, with the simple difference, that it has been made in a few weeks, out of an old slashing, instead of twenty or thirty years of engineering, leveling, plastering, pruning, manuring, and the thousand and one other things which are indispensable to create one from an already cleared surface.

The most grateful sensation of the whole to myself is, that instead of a nuisance to my estate, and of little account in a productive way, it has now a *paying* fancy value worth treble any other part of the farm, from its attractiveness as a place of Summer resort to the neighboring town's people, who find that they have a watering place, and park, close at home, instead of going several hundred miles away to enjoy a less desirable one among "the fashionables." It is, in short, a new creation; something, made of nothing; and hundreds of such can be just as easily made all over the country.

RUSTICUS.

Pruning Fruit, Shade, and Forest Trees.

June and July are good months for removing large limbs from fruit and shade trees. The sap is now in a right condition to form new wood, and the healing process commences at once. The foliage also serves as a shade to prevent sun checks in the wounded parts, although where large branches are taken from fruit trees it is better to coat the exposed portions with the solution mentioned below.

The tools for pruning are: *first*—a sharp, finely set saw, nearly pointed at the end, that it may enter between closely growing limbs. Neither should it be a "backed" saw, but like the common hand-saw used by the joiners. *Second*—a hand hatchet, like a small axe, easily used by one hand. *Third*—a stout pruning knife; and each of them sharp. Then, a step-ladder, easily carried in the hand, or on the shoulder. Of course we give no directions as to what particular branches are to be cut off, as the tree or shrub is not before us, presuming also, that the pruner understands his business.

As to the mode or manner of doing the work, let every branch be cut *close to the body* of the tree, or main branch from which it is taken, and the bark pared close and smooth, for the wound rapidly to heal over. If a choice tree, a solution of gum shellac dissolved in pure alcohol to the consistency of cream, should be laid upon it with a paint brush, to exclude the air, and prevent the exposed wood from sun-cracking.

Pruning, in general, is not half enough regarded

by tree, and shrub growers. A shade tree develops half its beauty, and growth, by good pruning. Forest trees, where it is any object to do so, are all the better for it; and every fruit-grower knows, or ought to know, that he can get no perfect fruit, nor full crops, without special attention to its practice; while every florist will tell you that to obtain the finest flowers, and the highest perfection of bloom, the nicest attention should be given to pruning out and properly adjusting the spray of the plant.

The Orchard.... V.

CHERRY.

This is a common fruit all over the country—of one sort or another. Yet, choice varieties are not always cultivated; and although they are much more abundant of late years than formerly, they are not nearly so much attended to as they should be. The cherry, as a tree in itself, for shade only, is exceedingly ornamental. It is hardy—particularly in its seedling, as a mazard, or unworked condition. Its shape is graceful and symmetrical, its foliage full, its flower fragrant and beautiful; and fruit, if worth little for eating, is grateful to the eye. But when the value of a really good cherry for edible purposes is considered, it is among the choicest list, and most economical of the smaller stone fruits. Therefore, where the soil and climate suits it, the cherry should always be cultivated as a farm and garden production—for household purposes, if not for market.

SOIL AND CLIMATE.

A dry, naturally drained—that is, a soil, with a porous, sandy, or gravelly under-stratum, letting off the water below, is what best suits the cherry, although it will grow and do well in a heavy surface-soil, with artificial or under drainage; or on a bank where the water-accumulations of the soil will flow rapidly off. But the true, natural soil for the cherry, of any kind, is a free, sandy loam, of good quality. In that, it grows, bears and luxuriates in perfection, and in such only would we recommend the plantation of cherry orchards, for market purposes. A few trees for family use may be put in almost any good soil—even a clay, made dry by under-drainage, if necessary.

There are some soils too "fat," as they are sometimes termed, to grow the cherry successfully, such as river-bottoms, unctuous prairie soils, and others, rich in the decomposition of vegetable humus. The trees here make a prodigious annual growth, and when arriving at full bearing age, are apt to burst the bark of their trunks, crack in the limbs, and shortly die. Extreme degrees of Winter cold in such soils are particularly fatal to them. The lighter soils are of medium quality in fertility, and are therefore most available, giving them a moderate growth, which the season fully ripens, and prepares to withstand the rigors of the succeeding Winter.

The climate of our Central and Northern States best suits them, although, in proper exposures elevated at the South, and sheltered at the extreme North, they frequently thrive, and do well. Indeed, they are so general in cultivation, that the localities favoring them are almost everywhere understood, by residents of only a few years, who have paid any attention to fruit culture. They should be tried everywhere, and if they succeed, the planter will be well paid for his pains and expense; if they do not succeed, the experiment with a few trees will not be costly. At all events, the fact of ascertaining whether they will grow, or not, is worth the trial.

USES OF THE CHERRY.

Every good housewife understands the value of the cherry, in the various cooking purposes to which it is adapted; and when of good quality it is palatable, in its ripe and grateful flavor, to almost every lover of fruit in its season. Not only for the table, as a dessert fruit, is it valuable, but for pies, puddings, tarts, preserves, both fresh and dried, it is most convenient and desirable, taking the place of other more costly, and foreign fruits of less excellence. Then, as a market fruit, it is always saleable, and in demand at good prices—two to four dollars a bushel, in our cities, towns, and villages. When properly selected, the fruit bears transportation to a great distance, and keeps in good condition much longer than the peach or the plum. It immediately succeeds the currant, and if a succession of varieties is planted, may be in season for a number of weeks—in many instances quite two months, although the usual cherry season comprises in the same locality, but about four weeks. It is scarcely needful to add, that a liberal use of the fruit, either in its natural state, or cooked in the many ways to which it is adapted, is both healthful and nutritious. Therefore, it is a desirable, useful, profitable fruit, and should be cultivated by everyone having the opportunity, and to such extent as his own family wants, or the market demand may render profitable.

PLANTING AND CULTIVATION.

Eighteen to thirty feet apart, according to the variety of the fruit, and quality of the soil, are the proper distances at which the cherry tree should stand in the orchard; and the general directions applied to the trees already treated of by us, equally well apply to them. Of pruning, cherry trees usually require little, and that chiefly to cut out cross limbs, chafing each other, or straggling out of place and deforming the head of the tree. The great drawback to the cherry orchard after coming into bearing, is breaking the limbs by careless picking, which should be guarded against by having proper step-ladders, hooks and baskets, and using care in detaching the fruit, which should always be taken with the stem upon it, thus preserving it from bruising, and enabling its carriage to a distance without crushing by its own pressure.

VARIETIES.

Were we to have but one variety of cherry, that should be the Kentish, or common pie cherry, so universally grown all over the country. Although called a sour cherry, and not so palatable to the taste as the better varieties of the "English," so called, yet for all uses, taken together, it is the most valuable for cooking, preserving and drying. It is the hardiest of all, and although not so rapid a grower, is a constant and prolific bearer, and withstands almost any amount of hard usage with impunity. Yet it equally well pays for good treatment and cultivation, and were we to cultivate cherries largely, although it brings a less price in the market, we would not be without a fair proportion of these. They ripen seasonably, and hang longer on the tree than any other variety. We have had them in eating, picking them daily from the same trees for six weeks in succession, which none of the choicer varieties will do.

After this, we name the May, and late Dukes, Black-tartarian, Yellow-Spanish, the old Black-heart and Elkhorn, as standard varieties, long proved, and furnishing the cherry season throughout in reliable excellence of flavor and quality, from the earliest to the latest. There are many other varieties in circulation, some of them new, which have obtained either a local or general celebrity, and are worthy of attention to the cherry

orchardist. But as our object is chiefly to recommend those well established, reliable varieties for family use, and a general and profitable market, we confine our names to a limited number of such; the books and nursery catalogues will give the rest. The cherry tree is a beautiful object in itself, and an interesting fruit to the amateur; and when time and opportunity permit, he may well indulge in a wide selection of the large number of new and choice varieties, many of which will amply repay the care he bestows upon them.

DISEASES.

These, happily, are yet but few with us, and the worst that we have seen are those which originate in an unpropitious soil, already noticed. Insects sometimes trouble the fruit, and the leaves, as birds do the fruit always. But the treatment of these not coming within the range of our discussion, we hand our readers over to the books, where, as well as the different varieties which may be inquired after, their various descriptions, and remedies may be found, and thoroughly studied.

The Pear and Cherry Slug.

BY A. O. MOORE, N. Y.

The insect which we familiarly call the Pear Slug (*Selandria Cerasi*), see fig. 1, next page, is, at the period of life when generally noticed by the cultivator, a greenish black, club-shaped worm, with a thick, rounded anterior extremity, and tapering toward the posterior. It is covered with a semi-transparent coat of slime, which exudes from its body, and, in the hottest sunshine, does not become hard or dry. There is not the slightest indication, as it rests on the leaf, that it possesses either head or legs, but under the club-shaped thorax it has a head like a caterpillar, and by rubbing off its slimy coat, or by turning the insect upon its back, it will be found to possess three pair of true legs, those which are nearest to the head, and seven pair of false or prolegs, the latter being more flat in shape than the former. While resting undisturbed upon the leaf, the tail or last segment of the body is slightly raised. At its greatest size, the worm is about half an inch in length; it is very sluggish in its habits, being rarely seen to move, not even attempting to escape when touched or otherwise disturbed, nor does it seek refuge from the most intense heat of the sun, or from the pelting rain, being always found fully exposed on the upper surface of the leaf.

It does not eat during the day, but about sunset commences to feed. The injury consists in its eating the upper skin of the leaf, while the lower skin and veins are untouched; the leaves immediately assume a brown unsightly appearance, while the proper function of the leaf, the elaboration of the sap, is almost entirely obstructed. Young trees are sometimes irreparably injured, and I have seen many acres in a single nursery, the trees of which were, from this cause, rendered permanently unsalable, and comparatively worthless. Older trees are often much injured by checking the formation of young wood and fruit spurs, which has a serious effect upon their growth and fruitfulness. As early as the year 1797, this insect attracted the attention of cultivators in Massachusetts, and elsewhere, by causing great injury to the cherry, pear, plum and quince trees; and it has, with little intermission, continued its depredations every year, until this time.

We have thus far considered the insect in only one form of its existence. It may not be uninteresting to investigate its origin and its subsequent condition. Like all other insects, its exist-

ence may be divided into four stages: first, the *Egg*; second, the *Larva*, or worm state, which is peculiarly its eating and growing period; third, the *Pupa*, or dormant state; fourth, the *Imago*, which is the perfect or winged state. In this last stage only are the differences of sex discernible, and by the Fly or perfect insect by which the eggs are deposited which reproduce the brood of destructive worms.



Fig. 1.

The Pear Slug full grown. The leaf with its upper surface partly destroyed. (a) The egg deposited upon the upper surface of the leaf.

This fly of the Pear Slug is described as a four winged (*Hymenopterous* or wasp-like) insect of a glossy black color. The wings are somewhat convex on the upper side and slightly wrinkled, transparent, reflecting the colors of the rainbow, the anterior pair having a smoky band across them. The legs are tipped with a dull yellow color. The body of the female measures rather more than a fifth of an inch in length, that of the male is smaller. They make their appearance twice during the Summer, the first time about the end of May or the first of June, the second appearance about the latter end of July. On each occasion they lay their eggs and disappear in about three weeks.



Fig. 2.

The perfect insect or fly of the Pear Slug—magnified. The cross lines represent the natural size.

The engraving, fig. 2, represents the perfect insect magnified. The cross lines show the natural size. This figure is taken from an English work, as I have not been able, personally, to verify its identity with our own insect. The other cuts are transcripts of my observations. The slug-fly deposits its egg singly on the surface of the most matured leaves, covering it with a frothy, white, varnish-like mucilage, which surrounds it, and serves at once to attach it to the leaf, and to exclude the atmosphere. The small spot *a* on the leaf, fig. 1, represents the size and form of the egg which is seen as a dark center in the middle of a white spot. Fig. 3 represents the egg magnified, and the worm or young slug within the

semi-transparent shell. Fig. 4 exhibits the egg also magnified after the insect has emerged.



Fig. 3.

Fig. 3. The Egg magnified with the embryo Slug seen through the shell.



Fig. 4.

Fig. 4. The Egg empty, after the Slug has escaped—magnified.

It may here be noticed that Dr. Harris in his admirable treatise on insects injurious to vegetation, in speaking of the Pear Slug, states that "their eggs are placed singly within large semi-circular incisions through the skin of the leaf, and generally on the lower side of it." It is singular that a statement made with so much particularity should be entirely at variance with the facts of the case. The egg I have never been able to find on the under side of the leaf or in any incision on either side, but very plainly can it be seen by close scrutiny on any tree attacked by the slug, deposited upon the upper surface of the leaf appearing as a white speck about the size of the head of a pin.



Fig. 5.

Fig. 5. (a) The Slug, after shedding its skin the last time. (b) The skin left upon the leaf.



Fig. 6.

Fig. 6. (c) The Cocoon from which the insect has been prematurely removed. (d) The Slug, after having commenced its change to the fly state.



Fig. 7.

Fig. 7. The Ichneumon fly, magnified; supposed to be of the species *Encyrtus*, taken from the egg of the Slug.

When first hatched, the young slug is white and can with difficulty be discerned with the naked eye; it commences immediately to puncture, with small holes, the surface of the leaf upon which it is produced. It soon acquires a covering of greenish black slime, and is said by Harris to live as a worm twenty-six days, shedding its skin during that period five times. At its greatest size it is half an inch in length, and is now nearly or quite ready for its last moulting. Fig. 5, gives its appearance after it has shed its skin for the last time, with the forsaken skin lying near it. It is now much changed in color, being of a yellowish brown and somewhat diminished in size. In a few hours it falls to the ground and immediately seeks to burrow into the soil. Descending to the depth of several inches it forms a cocoon with a shiny brown interior surface, and a rough exterior with grains of earth adhering. Fig. 6 shows a broken cocoon with the insect, now much further diminished in size, taken out. This is the *Pupa* or dormant state. It remains in the earth after its first appearance sixteen days, when it comes forth as the perfect insect, fig. 2. The second brood remain in their subterranean retreat until the succeeding Spring.

We will now consider the means for preventing or palliating the injury resulting from the attacks of the Pear Slug. I would first remark that the slug is found in much greater abundance on weakly growing trees than on those of strong and rapid growth. This fact points to the first and fundamental remedy; the securing of healthy trees and by the proper enrichment and preparation of the soil, of a thrifty and uniform growth. I have also noticed that certain varieties of the pear are much more subject to its attack than others. The Bartlett, Duchess d'Angouleme, and Louise Bon de Jersey, for in-

stance, have with me suffered more than the Glout Morceau, Vicar of Wakefield, and Beurre Diel. Nature has provided a minute but formidable enemy to the slug, which serves very materially to check its increase. This enemy is a species of *Ichneumon* fly which is also of the wasp family. Soon after the slug fly has deposited its egg on the leaf, the *Ichneumon* deposits its egg within the shell of the former, which developing to a minute grub before the time for the hatching of the slug worm, feeds upon the embryo slug, passing the whole period of its existence as a worm, and even undergoing the succeeding transformation through the pupa state, within the small space afforded by the egg of the slug, the natural size of which may be seen at *a*, fig. 1.

Fig. 7 exhibits the *Ichneumon* fly as found in the egg of the Pear Slug nearly ready to emerge as a perfect insect.

Fortunately for the cultivator, the Pear Slug is easily destroyed during the worm state, and since the discovery that the egg is deposited upon the upper side of the leaf, it can be easily reached in this stage of its existence.

The application at the proper time of lime in a dry or powdered state while the leaves are wet with rain or dew, will prove effectual in destroying the egg before it is hatched, or the slug during the time of its depredations. If the number of trees to be treated is large, it will only be necessary to apply the remedy twice during the season, provided the proper stage of the insect's development is chosen. This should be as soon as possible after the eggs are all hatched, which is usually about the first of July with the young brood, and the first of September with the second brood. The lime should be very carefully dusted on every leaf of the tree, and by following up the application promptly for a year or two the number of insects will be very much diminished. If applied earlier than the times mentioned, some of the eggs will not have hatched, in which case it requires much greater care and a larger quantity of lime; or if applied much later, many of them will have undergone their transformation into the pupa state, and therefore be beyond our reach. Many cultivators have reported a want of success from the application of this remedy, merely from the want of that knowledge of the history of the insect which would enable them to choose the proper time for its use. I have found this remedy always efficacious, and even plaster of Paris, ashes, or dust from the road applied to the slimy coat of the slug will cause it to sicken and die.—Rural New-Yorker.

Currant Bush Insects.

To the Editor of the American Agriculturist:

I write you in behalf of that old, familiar and useful fruit, the Currant. It is many years since I first noticed some of the leaves of the Currant bushes in my garden, which were then very fruitful and thrifty, to be covered with red spots. For several seasons, I paid little attention to them, as neither the fruit nor the shrub seemed to suffer. But at length, finding the appearance to be every year increasing, I searched for the cure, and found that wherever the upper surface of the leaf was turned red and slightly indented, the under surface was covered with lice. I then commenced clipping off the affected leaves, and continued to do so through the season. The next Spring, however, they appeared more wide-spread than before; and since then I have been clipping and the lice increasing. Last season I became satisfied that this course would never cure—that

at best it only checked the progress. I then resorted to several compositions said to be death on the whole louse tribe, but without effect. Next, I smoked some of them thoroughly with a mixture of lard and sulphur. The rising fumes did not annoy them, except where the heat was sufficient to crisp the leaves. Then, as a last resort I made a strong decoction of tobacco, and applied it as well as I could; some of the lousy branches were held in the liquor several minutes; but all in vain—even those that took the ducking, were as well to do as ever the next day.

Last year for the first time, I lost my entire crop, and fear that most of the stems are dead. I did not remove any leaves last year; perhaps, by doing so I might have saved my crop; but it is a great labor and promises but little; besides, the leaves are necessary to the perfection of fruit. I trim the shrubs several times in the season and keep them clear from grass and weeds. Sometimes I cover the ground with chip-manure, sometimes with forest leaves.

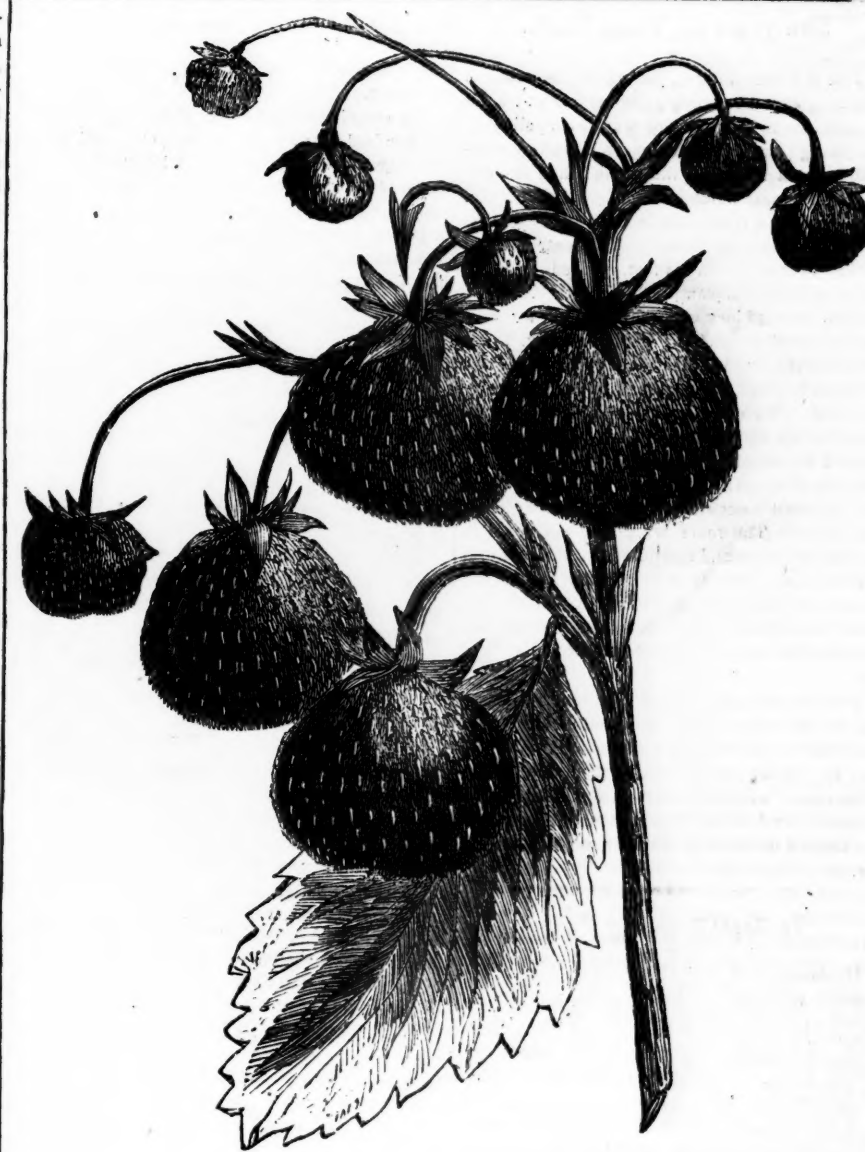
Now, Mr. Editor, as the Currant is regarded as an indispensable fruit in most country families, and as this insidious foe, which I have been combating so long in vain, is spreading throughout this part of Vermont—how much further I do not know—will you or some of the readers of the *American Agriculturist*, suggest an effectual remedy. That you may the better do so, I will give a more minute description of the insect.

Early in the Spring, before the first leaves are half grown, red spots appear on the upper surface of the leaf. Turning up the leaf nothing can now be seen by the naked eye; but in a few days a small nit becomes visible, and from these originate the lice. They gradually become quite large, when a pair of slender wings project from their backs, and they pass off in the form of a little fly. Others succeed and go through the same process, till the under side of the leaf is covered with them, the redness on the upper surface increasing in the same ratio. As the stem grows and other leaves form, they suffer in the same way. After the weather becomes warm and the lice thick and large, a multitude of green flies, about the form and size of the common house-fly, swarm about and light upon the bushes, as if greatly interested in the case; but what connection there is between the fly and the louse I have not been able to learn, I think the one does not generate the other. The Currant louse is unlike any other that I have seen, nor have I seen it on any other vegetable. No change of the elements or of location seems to affect them. Their progress, spite of everything that I have tried is onward. In Middlebury, twenty miles from this place, I saw a gentleman last Summer, clipping leaves from his Currant shrubs from the same cause. What can we do to destroy this little pest and save our fruit. DANL. GOODYEAR.

Hinesburgh, Chittenden Co., Vt., 1858.

REMARKS.

The flies alluded to are probably the Honey-dew flies (*Tephritis melliginis*) which hover around plant lice for the sweets which they obtain from them. A small species of ant is usually found guarding a flock of lice, running among, and apparently caressing them, for which kindness the lice give forth a sweet fluid which is greedily sipped by the ants. The flies referred to are also fond of "honey," and if they espy the lice in an unguarded state, hastily alight upon them and with their forefeet rather rudely scratch the backs of the lice, and they, not liking the rough treatment, spirt out the sweet liquid which the flies are in quest of, and it would seem, raise a cry for



A New Strawberry.

their defenders the ants. The latter hastily make a "descent" upon their enemies and woe to the leg or wing which they grapple. The flies usually beat a hasty retreat, but still hover about for another opportunity. We must leave some of our experienced correspondents to suggest a remedy for the pest described by Mr. Goodyear, and we hope they will also watch that destructive insect which has within a few years past, seriously injured the currant crop by destroying the branches themselves. We refer to the Currant Bush Borer. Perhaps our enterprising entomological contributor, A. O. Moore, will capture some of them, and with glass and pencil "show them up" in the columns of the *Agriculturist*.

To Kill Burdocks.

There are many ways to exterminate this pest, but the following is highly recommended: Let the plants grow until Midsummer, when the stalks and leaves are full of sap. Then cut off the roots with a strong, sharp spade, two or three inches below ground, pluck off the plant with a smart pull, and stamp the ground firmly over the remaining stump. It will seldom sprout again; but if it does, it will be in so weak a state that another application of the spade will end the matter.

We have prepared for the *Agriculturist* the above engraving of a new strawberry (yet unnamed), which is under cultivation by Dr. I. M. Ward, of Newark, N. J. Dr. W. invites the attention of cultivators, and amateurs to this fruit, which he will have in bearing during this month. Our engraving—which is an exact representation of the size and form of the berry—is from a sketch made at the close of the last fruiting season, when the plant had, in a measure, expended its strength. Dr. Ward says of it: "Other plants previously produced a larger number of ripe berries of uniform size." He claims as the main points of excellence, or superiority, that it is "very productive—the berries being of uniform large size. They are dark in color, firm flesh, and superior flavor, and are borne on foot-stalks twelve inches and more in height—the strength of the stalk being such as to sustain the fruit, and removing all necessity for mulching. The foliage shades the ground, so as to prevent, in part, the growth of weeds—and is so hardy as not to suffer under our coldest Winters, or be thrown out of the ground by frosts." There will be opportunity to test these claims before the plants will be in market. The engraving exhibits a depression where we should look for an apex, which shows a peculiarity of type.

How to set out Young Plants.

This is a little matter, yet of great importance. We once saw a bungling gardener set out a lot of tomatoes in the following way: He pulled up the young plants with his fingers, from the seed-bed, without loosening the ground, and thereby broke off a great number of tender fibrous roots. Then making a round hole in the vegetable quarters with a stick, he thrust in the plant, pressed the dirt around it with his foot, poured on some water, and left the plant to shift for itself.

After seeing him operate for a while, we begged the privilege of showing him our way. First, we mellowed up the soil where each plant was intended to stand, and scooped out a hole for its reception. Then we took a shingle (a garden-trowel is the very best thing for this purpose) and pressed it carefully underneath the roots of the plant so as to save all the fibers and to carry along with the root a quantity of the soil in which it had grown. The roots were then set down in the hole provided and spread out in their natural position, and a little fresh dirt drawn around the stem of the plant to keep it firm. A pint or so of water was added, and a couple of shingles set over the plant on the south side to keep off the sun.

The careless gardener got impatient before we had set out many plants, and declared he "could not afford to fuss so with a few plants." We told him he couldn't afford to set them out in any other mode; and on visiting his garden late in the Summer, we had the satisfaction of seeing that our method produced much finer vegetables than his.

To Repel Bugs from Vines.

Gardeners will find this "leafy June," this "month of roses," a busy season, and not an unimportant part of their work will be keeping bugs off from the cucumber, melon, squash and similar plants. We therefore detail several modes of fighting this enemy.

A decoction of tobacco and red pepper, sprinkled on the leaves of the young plants, will repel the bugs. Even the pepper-tea alone will be too strong for all that have weak stomachs. A mixture of two parts flour and one of black pepper, dusted on the vines while wet with the dew, answers as a partial protection at least.

Open boxes, six inches high and a foot and a-half square, set over the young plants, will answer a good purpose; or a cheap and convenient protector may be made of birch-bark, pasteboard, or what is still better, old floor oil-cloth, pegged down, as seen in the annexed engraving. They may be six or eight inches high, and of any desired size.



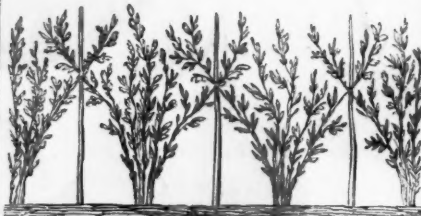
Where the two ends meet, it is well to tack them to one of the pegs. Place them around the hills as soon as the plants begin to break ground, banking up so that no bugs will work under them. Very few of the insect tribe will go over them. Bugs do not appear to be skilled in fence climbing. Simply standing bricks on edge around the plants usually keeps them out.

Liquid manure, made from hen-dung, and left to ferment, will drive off bugs by its offensive smell. Two shovelfuls of hen droppings to four gallons of water will make it of the desired strength. A half-pint of this liquid scattered over each hill, on every alternate day, will repel the bugs, and give the plants a vigorous growth.

A neighbor of ours says he has treated his

bug-visitors, for twenty years past, to a pinch or two of good Scotch snuff; they think this is something to be sneezed at, and therefore leave in disgust.

We once knew a man who planted his seeds by the hundred, all over his melon patch, and gave the bugs the largest liberty of his garden. He declared that he delighted to witness the enjoyments of animal life, and therefore would not kill bugs, but would rather feed them. He said that more than enough plants were left, after the bugs had taken their share, and he thought they were stronger and healthier vines, than if they were boxed up and dusted over with such acrid substances as snuff, pepper, ashes, guano, &c. And besides, did not this method save him a great deal of trouble?



Training Raspberries.

We present above a plan, differing a little from any one we have yet seen proposed, for staking or training raspberries. The sketch is from a plot in the garden of one of the Editors of the *Agriculturist*. This method of training has been practised for several years with satisfaction. It is, perhaps, better adapted to garden culture, where land is too valuable to admit the usual plan adopted in field culture of planting in large hills, four feet apart each way, to allow plowing both ways between the rows.

As will be seen by the engraving, the raspberry vines are set in hills, $1\frac{1}{2}$ to 2 feet apart, in rows from 3 to $3\frac{1}{2}$ feet; the more valuable the land and the more carefully it is attended to, the nearer may be the rows. Two, or even four canes are set in each hill at first, and at the proper time these are bent over and tied loosely to stakes set midway between the hills, one or more, as the case may be, on each side. The new plants springing up are allowed to grow erect. They can be kept in a line, if desired, by running a cord along from stake to stake on either side. Each hill thus takes a fan-like look. This arrangement prevents crowding, secures the admission of sunlight, and promotes a strong growth of young vines, which are to be the bearers the next season. It is of course understood that the root of the raspberry is *perennial* (lasting through many years), while the canes are *biennial* (living but two years), and producing fruit only during the second year.

As soon as the bearing season is over the old canes should be cut down, in Autumn the stakes taken up, and the young plants, if of tender varieties, bent down and covered with earth. In the Spring, the last year's growth is in turn tied over to the stakes to make room for a new growth.

Frequently the young plants are so numerous that it is advisable to bend and tie three or more to a single side stake. They should be tied at different heights.

WAKE MONEY—A good looking Irishman stopping at a hotel to warm himself, inquired of the landlord "what was the news." The landlord disposed to run upon him, replied, "they say the

devil is dead." "An sure," says Pat "that's news indade." Shortly after, he went to the bar, laid down some coppers and resumed his seat. The landlord always ready for a customer, asked him what he would take. "Nothing at all at all," said Pat. "Why then did you put this money here?" "An sure, sir, its the custom in me own country, when a chap loses his daddy, to give him a few coppers to help him pay for the wake."

Frost in Valleys.

Many persons suppose that, because valleys are sheltered from the wind, they are therefore warmer than the hills. Undoubtedly, they are warmer at certain times, especially in the Summer, and they are more comfortable in stormy weather. But whenever the air is still, they are colder than the hills. And why so? Plainly, because cold air is heaviest and sinks into the lowest places, and is not displaced by warm currents there, as it would be on the breezy hills. When one passes, on a Summer evening, from a hillside into a valley, the change in the temperature is very apparent: the air of the valley is damp and chilly. The same thing appears in Winter; the air of the valley may be still, but it is sensibly colder. Hence, early Spring crops and late Fall crops often suffer more from frosts in the valleys than on the hill-sides. The same applies to fruit which is sometimes cut off in the valleys, when it escapes harm on the hills.

It is surprising to notice how different the effects of frosts are, within a short distance, and with a depression of only a foot. We have lately met with the report of some observations on this subject, made in Montpelier, France. In a botanic garden, containing olive trees, sweet bays and fig trees, some perished from frost, while others escaped; and the different results were owing not to difference in the vitality of the several plants, but to the effect of shelter and situation. Thermometers were hung about in various parts of the garden, but the effect of frost on the trees showed the difference of temperature as plainly as the thermometer. For instance: in a low part of the garden, the bay trees almost all died, but in another part, on a swell of ground raised only six yards, they suffered but a little. So with the olive trees. In low places, the foliage was killed back to the old limbs. And so "in all the districts between Montpelier and Nîmes, the olive trees of the plain suffered more or less, while those on the hills sustained no injury." The same thing was found true with the fig trees and pomegranates. This report concludes with inferring the general law, that "cold is most injurious in low places where radiation is most intense in consequence of the tranquility of the air; and least injurious in exposed places where the agitation of the air opposes the effect of radiation."

A cotemporary journal mentions the case of a thrifty young hickory, about forty feet high, which stood in a depression about 20 feet deep. The young shoots had grown a few inches, and being quite succulent, were easily touched by frost. After a certain cold night, the leaves on about one half the tree, the lower half, were found to be black and dead, while those on the upper half were as green as ever. We lately read of an experiment where a thermometer suspended in a low valley, sunk on a frosty night to 27° , while on a rise of ground near by, only sixty feet higher, there was no frost, the mercury falling only to 33° .

Facts like these might be multiplied, but these

are enough to suggest important lessons to farmers and fruit-growers. And among these lessons, we may mention the following: Indian corn may be expected to suffer more from frost in low valleys than on hill-sides. Fruit-buds, especially of such tender trees as peaches, nectarines, and apricots, and delicate shrubs and flowering plants, native and foreign, will suffer less from frosts on the hills than in the valleys. The intense heats of low lands in Summer, and their richer soil, tend also to make a more succulent growth in trees so situated, and thus expose them to greater injury than those planted on the hill-sides. Let farmers and others living on the hills, who sometimes complain of the loneliness and inaccessibility of their homes, take comfort in the foregoing. Let all planters study local climates, and act accordingly. Surely they will reap a benefit.

Trees on Made Ground.

To the Editor of the American Agriculturist:

Some four years ago I built my house in the woods. While walling the cellar the workmen ate peaches and scattered the pits about, where a portion of them sprang up and are now growing. The next Spring I cleared some ground and set out 25 peach trees of two years' growth. I dug wide deep holes and put in plenty of manure with rich soil from old decayed stumps. Now one seedling which sprang up near the corner of the house where I filled in some two feet with earth from the bottom of the cellar, is more than twice as large and far more thrifty, with no attention save pruning, than either of the 25 trees which are two years older.

I also set out six cherry trees three years ago, which were then about the size of a man's thumb. They are in my yard and are growing finely. The soil has never been stirred among them, with the exception of one tree which was set on a spot where I had carted in $3\frac{1}{2}$ feet in depth of earth from the bottom of my well, 16 feet in depth. The soil is a hard, stiff blue clay, mixed with gravel. This tree has grown to exceed belief, being now more than a foot in diameter. Now what is it that makes so much difference in the growth of these trees in favor of the hard soil? J. B.

Newburg, Clinton Co., O.

REMARKS.

We think the success of these trees is not due to the hard unproductive soil of the bottom of a cellar or well, as our correspondent supposes, but to the fact of their being upon *trenched* ground, with the good rich surface soil underneath for the roots to penetrate as soon as they should reach it. The filled in earth would be in a loose state for the roots to run among, and the soil although apparently poor, had not parted with as much of the "tree growing materials" as that near the surface which had long grown wood. The peach tree probably grew faster for being a *natural fruit*. Grafting a tree tends to check its growth and throw it into bearing.

THE USUAL RESULT.—An Irishman in the witness box, was asked what they had at the first place they stopped? "Four glasses of ale." "What next?" "Two glasses of whiskey." "What next?" "One glass of brandy." "What next?" "A fight."

DENTISTRY FREE.—A down-east editor advises his readers, if they wish to get teeth inserted gratis, to go and steal fruit where his watch-dog is on guard.

The Buttonwood Tree.

We do not rank the buttonwood or plane-tree (sometimes, but erroneously, called sycamore) among our best trees. It is, however, interesting, from the large size of its leaves, the peculiar white color of its bark, the numerous russet seed-balls, many of which hang from its twigs throughout the year, the rapidity of its growth, and the immense size to which it attains. It is, we believe, the largest tree of the Northern States, and second only to the *Sequoia gigantea* of California. We have read of a specimen, near Marietta, Ohio, which, at four feet from the ground, measures 47 feet in circumference. Mr. Downing mentions one cut down on the banks of the Genesee river, "of such enormous size, that a section of the trunk was hollowed out and furnished as a small room, capable of containing fourteen persons."

It shows its greatest beauty when growing on the rich alluvial bottoms along our creeks and rivers. There, it often towers up 70 feet, and throws abroad a magnificent canopy of branches, surpassing nearly every other tree of the forest. Its peculiar habit of shedding its bark at intervals throughout the year, adds to its picturesqueness, perhaps, but not to its real excellence as a shade tree. This habit is ascribed by botanists to the rigidity of the outer bark, its lack of expansive power corresponding with the rapid growth of the tree from within. The bark bursts instead of stretching, and falls to the ground. Bryant alludes to this feature of the tree, in his address to Green River:

"Clear are the depths where its eddies play,
And dimples deepen, and whirl away;
And the plane-trees' speckled arms o'ershoot
The swifter current that mines its root."

Educated minds love to associate this tree with its first cousin, the oriental plane, so highly esteemed by the ancients. The Academic groves and the neighborhood of all the Grecian schools, were planted with this last-named tree. It is linked with the names of Socrates and Plato, who discoursed of philosophy beneath its shade. There is but a trifling difference between the native and the foreign tree. The foliage of the American is the largest. "The oriental plane," says a writer, "has the leaves lobed like our native kind, but the segments are much more deeply cut; the foot-stalks of its leaves are green, while those of the American are of a reddish hue, and the fruit or ball is much smaller and rougher on the outer surface, when fully grown." We observe that both varieties are advertised in the catalogues of some of our nurserymen.

We do not know whether there are any serious practical difficulties in the way of growing the foreign variety. It is to be regretted that the native tree is occasionally visited with a blight which mars its beauty, and sometimes kills the tree outright. The young shoots are sometimes nipped by late frosts in Spring, and when the tree recovers and puts out new shoots, they are often quite feeble, and do not become ripe enough in Autumn, to withstand the frosts of Winter. If it sprouts the succeeding Spring, it is, perhaps, to go through the same ordeal, and with less vigor to pass it safely. It is thought, by some, that this blight is not caused by frost, but is a disease or epidemic peculiar to this class of trees. They point, in proof, to certain brown blotches in the bark, where the sap has ceased to circulate. But may not these spots be the effect, and not the cause of the trouble? Strange indeed it is, that a native tree, and otherwise hardy and vigorous in growth, should be so smitten, while others around go un-

scathed! We observe that the same malady affects this tree in England. British writers speak of it as "in reality of a more delicate constitution, and less able to bear the vicissitudes of the climate than the oriental plane."

Whatever may have been the cause of the disease, we are glad to learn, that in many parts of the country, it is passing away, and the tree bids fair to become again healthy and vigorous.

The Paulownia.—Imperialis.

We are not going to repeat any of the high sounding terms which were applied to this tree on its first introduction. The furor it excited, several years ago, in France and England, seems now almost incredible. It is too tender a tree for successful culture in the Northern States. North of Albany, it is generally cut down by the Winter; South of New-York city, it attains considerable size.

It is a native of Japan, and grows as rapidly as the Ailantus, whose wood it somewhat resembles. In its native country, it attains forty and fifty feet in height. Its leaves are often two feet in diameter, slightly rough and hairy, and serrated on the edges. They are heart-shaped, resembling somewhat those of the Catalpa, but are perhaps more like those of the sunflower. It produces clusters of bluish lilac flowers, of a tubular-shape, appearing in April and May, and having a slight perfume.

Our Southern readers can grow this tree easily, and will need no urging from us to introduce it into their ornamental grounds. But there is an important use to which it may be applied, even in the Northern States, and it is this which leads us now to speak of the tree. This use is as an ornament to well-kept grounds. Let it be planted on the outskirts of a lawn, and it will give a peculiar air, at once, to the place. It will, perhaps, die to the ground every Winter, like herbaceous plants, but it will shoot up, every Summer, several shafts, six or eight feet high, with broad, palm-like leaves, giving quite a tropical look to the grounds about it. It adds something of the same aspect to a lawn which large specimens of hot-house plants do, when wheeled out in Summer into the open air; but with this advantage over them, that the Paulownia springs from the earth, while the house plants are confined in ugly tubs and boxes. Will amateur gardeners make a note of this? When they have tried it, as we have, they will thank us for the suggestion.

Nobody.—The tallest trees are most fiercely assailed by the winds. The more shining mark is oftenest hit by the arrow. The best man is the greatest object of hate by Satan and his emissaries. One should fear when only the evil speak well of him. Some writer, we know not whom, has versified a similar sentiment as follows:

If nobody's noticed you, you must be small,
If nobody's slighted you, you must be tall;
If nobody's bowed to you, you must be low,
If nobody's kissed you, you're ugly we know;
If nobody's envied you, you're a poor elf,
If nobody's flattered you, flatter yourself;
If nobody's cheated you, you are a knave,
If nobody's hated you, you are a slave;
If nobody's called you a 'fool' to your face,
Somebody's wished for your back in its place;
If nobody's called you a 'tyrant' or 'scold,'
Somebody thinks you of spiritless mold;
If nobody knows of your faults but a friend,
Nobody'll miss of them at the world's end;
If nobody clings to your purse like a fawn,
Nobody'll run like a hound when it's gone;
If nobody's eaten his bread from your store,
Nobody'll call you a 'misery bore';
If nobody's slandered you—here is our pen—
Sign yourself Nobody, quick as you can.



GEANT DES BATAILLES ROSE—(Giant of Battles).

Culture of Roses—Classification.

Roses are classed into three distinct divisions. These are: *First*—The *JUNE* or garden Roses, which bloom but once in the season, usually in June. *Second*—The *REMOYNTANTS*, sometimes called the Hybrid Perpetuals, which generally have several distinct periods of bloom. *Third*—The *EVERBLOOMING* Roses, which are in flower during the entire Summer.

The first class is the most common, and where others cannot be obtained a portion of them are certainly worth growing, especially some of the *moss*, *brier*, and *climbing* varieties belonging to this class. The highly prized *Prairie Queen* and *Baltimore Belle* are included in this division. They are all perfectly hardy.

The second division is often confounded with the third, from the fact that certain free blooming *REMOYNTANTS*, like the one shown above, with good culture on a rich, deeply worked soil, so extend or run their periods of bloom into each other that they nearly approach everblooming roses.

We prefer the term *REMOYNTANT* (growing again) to that of Hybrid Perpetual, which does not convey a clear meaning. This is an extensive class of hardy roses, embracing many of the finest varieties under cultivation. Conspicuous among them is the subject of our engraving. It has a large flower of a brilliant scarlet color, growing upon a somewhat dwarfish, but vigorous bush. We consider it one of the very best of its class. Were we to make an extensive plantation of roses, two-thirds, at least, would be *REMOYNTANTS*.

The third, or *Everblooming* class, has several sub divisions, among which are *Bourbons*, *Chinas*, *Teas*, *Noisettes* &c. Some of these are nearly

hardy in this latitude while others need Winter protection. The *Bourbons* succeed as far north as Boston and Albany, with a slight Winter covering, and are a very fine class. That charming rose "*Souvenir de la Malmaison*" is a *Bourbon*. The *Chinas* are prolific bloomers but require Winter protection in this climate. The *Teas* and *Noisettes* are but sub-divisions of the *Chinas*. We protect our *Bourbons* by bending over and covering with earth in the Fall, as we would raspberries. Our *Malmaison* came out fresh and bright this Spring.

We do not propose here to go into a lengthy dissertation on the culture of this choice shrub or climber, but will remark that no plant repays generous treatment better than the rose. A strong, rich, moderately moist soil suits it best; and to succeed well the ground should be trenched and a full supply of well rotted manure and muck added. On poor ground it succeeds indifferently. As before remarked, high culture will nearly make everblooming roses of the *Remoyntant* family.

Two Layers of Seed.

RAIN continues to fall copiously almost every day. There is danger that many seeds will be rotted, and require a second planting. Fearing something unusual, after our almost snowless Winter, and valuing time, ground, and labor, more than seed, we sowed many of our garden seeds in double layers—first a deeper lot; then a layer of earth; then more seeds with a slight covering of earth. It will be strange if some of them do not find their way to the light, let the weather be wet or dry, though if it does not "clear up" soon after this date, (May 18), they may all rot.

IN DOOR WORK.

Milk as Food.

Milk, if good, is without doubt a most excellent food for adults as well as children. We think there are strong physiological reasons why children, at least those under two years of age, should be supplied only with milk from farrow cows. We do not allow our own children to be fed with other than farrow cows' milk until they are past four years old. The reasons for this were given on page 117 of the *fifteenth* volume of the *Agriculturist* (Feb. 1856), and we will not take up that matter again now, though we are inclined to do so hereafter, as we have no copies of that number remaining. We purpose now to refer briefly to the composition and properties of milk.

Milk consists of four principal ingredients, besides a little mineral matter, which may be obtained in the form of ashes, when the milk is dried down and burned. This ash, or mineral seldom exceeds 1 lb. in 130 to 150 lbs. of milk.

The main ingredients of milk are: *water*, *sugar*, *curd* (*casein*), and *butter* (*fat*). The average proportion of each of these substances is nearly as follows:

Water.....	about 87 lbs.
Sugar (of milk).....	about 4½ lbs.
Curd, or casein.....	about 4½ lbs.
Butter, (oil or fat).....	about 3 lbs.
Ash, or mineral matter.....	about ½ lb.

100 lbs.

The sugar and curd are dissolved in the water, and the butter or oily matter is simply diffused through it, in minute particles, too small to be seen separately. These particles are enclosed in sacs or bags.

Any one can separate these several ingredients. The oil will rise to the surface in the form of cream. A little vinegar or other acid will cause the curd (*casein*) to coagulate, when it may be separated by straining through a paper filter placed in an ordinary glass or tin funnel. Then boil it down a little and strain again, which will remove nearly all the curd, and leave a clear and almost colorless whey. Next evaporate the whey to dryness, and a mass of white sugar will remain. Or, after separating the cream and curd, evaporate the whey to about one-fifth its bulk, by gentle boiling, and set it aside in a cool place for a few days, when white or transparent hard crystals of milk sugar will be deposited upon the bottom and sides of the vessel. A further evaporation and setting aside, will produce another crop of crystals. This is pure milk sugar, not so sweet as cane sugar, but still quite good. As above stated, 100 lbs. of milk contain nearly 5 lbs. of sugar. The first described process of boiling down the whey at once to dryness, is adopted in some countries for obtaining sugar for food.

It may be remarked in passing, that, according to the above table, there are about 13 lbs. of solid nutriment and 87 lbs. of water in 100 lbs. of milk. The turnip has only about 10 lbs. of solid nutriment, and 90 lbs. of water to the 100 lbs. Water-melons contain some 6 lbs. of solid food, and 94 lbs. of water in the 100 lbs. (This renders almost credible the statement that old Mehemet Ali was able to eat a forty-pound melon after the substantial of his dinner). Potatoes have an average of 25 lbs. of solid food and 75 lbs. of water to the 100 lbs. Eggs 26 lbs. solid food and 74 lbs. of water. Lean beef about 22 lbs. of solids, and 78 lbs. of water. These comparisons show that milk is by no means poor in the substantial elements of food.

An examination of the quality of the solid ele-

ments the, sugar, curd, and oil or butter, and of the proportions of each, will further show the peculiar adaptation of milk as human food. Aside from the lime (or phosphate of lime) in the bones, the solid parts of the human frame, and of all other animals, consist essentially of oils (fat), and muscles (lean flesh) including the tendons.

The muscles (lean flesh) contain nitrogen, and in their composition, resemble casein or curd of milk, albumen or white of eggs, gluten of grains, &c.

The fats or oils are carbonaceous (coal) compounds, being, in their composition, very like milk oil or butter. But sugar, as well as starch, is also a carbonaceous compound, and as food, it furnishes the elements for forming fat or oil. This fat or oil of the body supplies the carbon consumed in breathing, by which operation the carbon (or coal) of the food is consumed, and the heat of the animal system kept up.

Here then we see, that 48½ wine quarts (100 lbs) of milk furnish 4½ lbs. of pure solid casein or curd, which goes directly to form the muscles or lean flesh that give strength to the body. The same milk, 48½ quarts, affords 3 lbs. of butter, which is almost identical with human fat. The same milk furnishes 4½ lbs. of sugar, which also gives the elements for making fat, and for producing heat.

The 12 ounces of mineral matter—that portion left as ashes, when 48½ quarts of milk are burned—consists largely of phosphate of lime, which constitutes the solid parts of the bones.

We have, then, in milk the constituents of the animal frame, and what is more, they exist in good milk in just about the proportion required to sustain and increase the several parts of the system.

Another important consideration is the fact, that in milk the elements are already divided, ready to be acted upon by the gastric juice of the stomach, which is not the case with most other kinds of food. Much of the energy of the system is exhausted in digesting unmineralized solid food. Small lumps of potato, bits of meat, &c., though no larger than a pea, often lie for hours before fully dissolving, and produce irritation, and frequently induce acidity or sourness—effects not produced by pure or water-diluted milk, from healthy cows fed upon well-conditioned food, not distillery swill slops, and such-like materials.

Use of Lime.

This article may be used in several ways, very advantageously, just now. Scatter it around your cess-pools and kitchen-drains, and over the floor of your cellar, where vegetables have been stored. It is a powerful disinfectant, to prevent unpleasant and unwholesome odors. Use it liberally, also, as a whitewash. Have you old buildings not worth a coat of paint, fences, sheds, hen-houses, and granaries in the same condition? Give them a dressing of whitewash. And don't forget the inside walls of your cellar. Nothing will make the air below stairs so sweet and healthy as this.

Scrap Books.

F. T. R., of Ottawa Co., Ill., writing to the *Agriculturist*, adds the following note containing an oft repeated, but none the less valuable suggestion: "Persons very often meet with items of valuable information in old newspapers that they do not keep on file. If all these scraps were cut out and laid carefully away, and when a sufficient

number were collected (say once a month) were neatly pasted into a blank book, alphabetically arranged, they would, in a short time, form a valuable fund of information for future reference. In this way, an *Agricultural Scrap Book*, or a *Housekeeper's Scrap Book* might be made that would be in constant demand for recipes and other information, besides furnishing pleasant occupation for leisure hours."

A First Rate Whitewash.

We have tried various preparations for whitewashing ceilings, and the walls of unpapered rooms, but have never found anything that was entirely satisfactory until the present Spring. We have now something that affords a beautiful, clear, white color, and which cannot be rubbed off.

We procured at a paint store, a dollar's worth of first quality "Paris White"—33 lbs., at three cents per lb.—and for this quantity, one pound of white glue, of the best quality, usually called Cooper's glue, because manufactured by Peter Cooper of New York. Retail price 50 cents per pound. For one day's work, ½ lb of the glue was put in a tin vessel, and covered with cold water over night. In the morning this was carefully heated until dissolved, when it was added to 16 lbs. of the Paris White, previously stirred in a moderate quantity of hot water. Enough water was then added to give the whole a proper milky consistency, when it was applied with a brush in the ordinary manner. Our 33 lbs. of Paris White and 1 lb. of glue sufficed for two ceilings, and the walls and ceilings of seven other smaller rooms.

A single coat is equal to a double coat of lime-wash, while the white is far more lively or brilliant than lime. Indeed the color is nearly equal to that of "Zinc White," which costs at least four times as much. We are satisfied, by repeated trials, that no whitewash can be made to adhere firmly without glue, or some kind of sizing, and this will invariably be colored, in time, with the caustic lime. The Paris White, on the contrary, is simply pure washed chalk, and is entirely inert, producing no caustic effect on the sizing. Any of our readers who try this, and are as well pleased with it as we are, will consider the information worth many times the cost of an entire volume of the *Agriculturist*. Had we known of it when we first "set up housekeeping," it would have saved us much labor, and the annoyance of garments often soiled by contact with whitewash—not to mention the saving of candles, secured by having the ceiling always white enough to reflect instead of absorbing the rays of light.

To Keep Hams in Summer.

One good way is to put a layer of coarse salt in the bottom of a barrel, then lay in a ham and cover it with salt, and then another, and so on till the barrel is filled. Of course, this salt should be dry, and the barrel should be kept in a dry place.

Another and better way, is to sew up each ham in a coarse cloth bag, then give the whole a coating of whitewash and hang up the bag in a smoke house, or any dark, cool place.

A sure way of keeping hams fresh, but not a neat way, is to bag them as before mentioned, and bury the bag in the ash-hole, taking it out as wanted.

We have known them to keep very well by simply wrapping in several thicknesses of newspaper and hanging in an open garret. A correspondent says they also "keep perfectly, as he has proved, by packing in sweet dry hay run

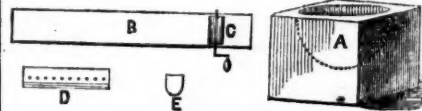
through a hay cutter. Then wrap them with a single thickness of newspaper, and surround each ham with a portion of the hay; tie the whole in large cotton bags, and hang in a dry place."

How Wax is Bleached or Whiten.

BY LEMUEL G. OLMSTEAD.

[The white wax, so much used in many of the arts, for candles, especially in Catholic churches, and which is preferable for ordinary sewing purposes, is simply yellow beeswax whitened by bleaching, by the same influences, air and light, which bleach clothing spread upon the snow or grass. Any housewife can whiten what wax she may need for her own use, or even for sale, by simply forming it into very thin strips with a knife or pouring it upon the surface of water, and spreading it upon canvas out of doors. There are large bleaching establishments at Philadelphia, where the process is very similar to that described below, furnished for the *Agriculturist*, by Mr. Olmstead, who witnessed the operations at the *Cerei-uola*, (wax works), in Siena, Italy.—Ed.]

Twelve hundred pounds of beeswax are melted at a time in a large copper kettle, A, which is set



in brick work. B, is the upper view of a trough or vat made also of brick work, 20 feet long, 3 feet wide, 2 feet in depth, and filled with water. C, is a solid cylinder of wood about 15 inches in diameter, partly submerged in the water, and turned like a grindstone. D, is the bottom view and E the end view of a tin vessel, into which the melted wax is dipped. The wax falls in fine streams through the small holes represented by the dots, upon the surface of the revolving wet cylinder, by which means very thin ribbons are formed that float off upon the surface of the water, the water being kept in motion by the turning of the cylinder.

One man dips in the wax; another turns the crank; a third with a shovel made of willow twigs dips out the wax ribbons into large trays with willow bottoms, and two men carry it out to the bleaching yards, where are four tables, placed side by side, each 10 feet wide, 60 long, and 2½ high. The tops of the tables are made of reeds, over which is stretched a coarse canvas, and upon this the wax in thin ribbons is spread. In handling the wax, spreading it, &c., it breaks up into short pieces. Two of these tables hold 1,200 pounds of 12 ounces to the pound (Troy?). The wax is spread on the canvas about 1½ inches thick. As it lays up lightly and loosely, the light of the sun penetrates to the bottom.

They melt the wax over and make it into ribbons twice, during the process of bleaching, which occupies thirty days, in which time it becomes white as snow. It is exposed to rain, &c. They prefer to have rain in that climate, because, when the sun is very hot, they are obliged to sprinkle water upon the wax to keep it from melting and running together.

Immense quantities of wax candles are burned in the churches in Italy, as every Sunday is a feast day, as well as almost every week day. There is no worship there without the use of wax. Different colored wax is provided for different occasions. On some days the yellow, unbleached wax is used. Sometimes that which is colored. This is a very economical arrangement, inasmuch as there is no

loss of wax. That which becomes soiled, so that it is not a perfect white is then colored. A Church orders from one of these establishments what they require of various sizes, &c. They burn what they need, and the rest is returned and deducted from what they took. They thus pay for the deficit. Only a few inches of a candle which is five feet long are burned.

There are five large *Cerauole* in Siena. The large candles (some of 4 inches through and 5 or more feet long) are made by suspending the wicks and pouring the wax over them. They are made round and very true by rolling them under a plank on a table. They are colored by putting in chrome, Prussian blue, &c. They are then hung up in the sun for a time to harden. Wax unbleached is worth three Pauls (about thirty cents); bleached, forty cents for a pound, Troy weight.

Recipes.

Rhubarb Pies.

"Jeanne," of Lancaster, Erie Co., N. Y., contributes the following to the *Agriculturist*, which she esteems as a great improvement. "Prepare the stalks by peeling their *thin skin*, and cutting fine enough for a pie—one or two stalks less than by the old method. Put in a basin with two or three tablespoonfuls of water, and boil for a few moments which reduces to a soft pulp like apple sauce. Have ready, when partly cool, two soda crackers rolled fine, and two-thirds of a *teacup* of sugar instead of a whole one, which add, mixing thoroughly. This is the rule for *one pie* using upper and under crust."

[To this we will add, that a great saving of sugar can be made by adding to rhubarb a small quantity of soda—a pinch of soda will go about as far as a handful of sugar in neutralizing the acid. Whenever it is desired to economize sugar, or when a very sharp sour taste is not relished, the soda may well be used. It is invariably used in our own family and with great satisfaction.—Ed.]

Dried Rhubarb for Pies.

S. A. P., of Carroll Co., Ind., writes: It may not be generally known that good pies and tarts can be obtained by cutting your surplus pie-plant into small bits and drying them for Winter use. For use, soak them, and then stew them like dried apples. They are nearly as good as when fresh.

Pickling Hams, Shoulders and Jaws.

Peter Tillar, Jr., Westchester Co., N. Y., commends the following to the readers of the *Agriculturist*: For the hams, shoulders and jaws of a hog weighing about 200 pounds, take 3 lbs. of salt, $\frac{1}{2}$ lb. saltpetre, ground fine. Mix these well, rub on the meat, and pack away closely. After about three days, pour on a pickle, made in the proportion of 4 lbs. coarse salt and 2 ounces of saltpetre to 5 gallons of water. These are to be boiled together, and added when cold. The meat will require pickling from 4 to 8 weeks. Mr. T. adds: "There may be better recipes, but I know this to be good."

To Preserve Furs from Moth.

A correspondent submits the following plan which seems quite plausible, since moths do not work in cotton or linen: Shake out the furs well, or beat them, to expel any moths that may be already in them; then inclose them *perfectly tight* in a cotton bag (or one of linen), and hang them in a garret, or other dry place. If there be no access for the parent moth except through cotton, no eggs will be laid in the furs.

WHALE OIL SOAP.—Many inquiries for this article constantly come to us. It is to be found at most agricultural warehouses and seed stores, and it is now offered in our advertising columns by the quantity. The price is about 4 cents per lb., according to quality, price of oil, &c. We have been shown a lot of 8 or 10 barrels at much less prices, it being inferior for manufacturing purposes, but answering perfectly well for use on trees, &c.

OUR BASKET

Into which are thrown all sorts of paragraphs—such as NOTES and REPLIES to CORRESPONDENTS, with Useful or Interesting Extracts from their Letters, together with Gleanings of various kinds from various sources.

To Correspondents.—More letters than ever have come in the past month, containing valuable communications for the paper, and questions of general interest. These are all acceptable, but cannot be attended to faster than our time and space will allow.

Letters on Private Business.—We have before us a multitude of letters asking specific questions, and usually inclosing stamps, as is right, for personal reply. So far as is in our power we cheerfully respond to such letters, but we beg to say that their number far exceeds our time and ability. Matters of general interest must first be attended to. Correspondents will therefore please consider any delay or failure to answer their personal letters as wholly due to absolute want of time, and not to oversight or neglect, or to inattention to their requests.

Caterpillar Brushes.—C. J., Queens Co., N. Y.

We know of nothing better for the purpose you desire, than a little implement illustrated in the accompanying sketch. This cut we have had made from a caterpillar brush which we recently received from the Brush Factory of John G. McMurray & Co., Lansingburg, N. Y. These, from the stiffness of the brush, and excellent workmanship, are superior to any we have seen. It will be observed, that the brush here shown is to be tied to the end of a stick or pole of any desired length. It can then be twisted into the nests and by this means gather up the web and the caterpillars, and bring them to the ground. The brush portion is about seven inches long, and two and a-half inches in its greatest diameter. The retail price is thirty-seven and a-half cents.



Cabbages for Seed.—J. R. Reeve, Shelby Co., Ill. Pull up a few cabbages by the roots, in the Fall, and stand them upon the ground in the cellar. At planting time, in Spring, set them out in the open ground, and if the head is firm, cut it across the top to allow the shoots from the heart to grow freely, and abundance of seed may be expected. Many set out only the *stumps* after the heads have been used, but we prefer the whole plant.

Roses for Prairie Cottages.—Susan Gibbons, of Udina, Ill., inquires for standard roses. The common Michigan, the Queen of the Prairie and the Baltimore Belle are good, hardy roses, fine growers and bloomers, and with *blossoms* inside of the cottage to cultivate them they would soon impart rose color to any prairie home. If anything could win the "men folks" to the flower border, it would be these roses.

The Blooming of Callas.—D. B., Columbia, Me. Many of the parlor plants will not bloom until their roots have thoroughly filled the pot or tub in which they grow. Putting the plant into a smaller pot will have the same influence as shortening in the roots of a tree, and tend to throw it into flowering. Change the soil, putting in half muck, and give plenty of water.

A Large Tulip.—E. Kalb, Fairfield Co., O., writes (May 13), that he has a Tulip, of deep red color, the cup of which is 2½ inches deep, and 5½ inches in diameter; and inquires if a larger one was ever seen by any

one else. It is perfectly bell-shaped. The bulb came from near Hagerstown, Washington Co., Md.

Grape Vines for the Conservatory.—Mrs. Robinson, Brown Co., Wis., and others. Make a border on the *outside* of the conservatory, and plant the roots, introducing the vines through small apertures near the bottom of the sides of the building, as in a forcing grape-ry. If there be no space for a border, set the vines in large pots or tubs, using rich soil, and watering freely. In both cases train the vines up the sides and roof if glass. In the absence of a glass roof train along the sides.

Mushroom Beds.—"C R," of Wis., will find these fully described on pages 262 and 290 of our last volume (Nov. and Dec. numbers).

Clipping Strawberry Runners.—B. F. Reed Calhoun Co., Mich. Strawberries, for bearing alone, do better by having the runners clipped. Keep them short by pinching back once a week during the growth of the runners.

Sugar Cane Seed for Feed.—A Western correspondent inquires if sugar cane seed is poisonous when fed to stock. We should say decidedly no, having not seen the least reliable statement or reason for such supposition.

Dead Bark on Apple Trees.—J. J. Jackson, Tioga Co., Pa. There are a variety of causes for this. Sometimes it is occasioned by a wet soil. For this there must be under draining. Sometimes it is caused by insects. For these, common soft soap with a scrubbing brush is a good remedy. A pound of potash dissolved in two-and-a-half gallons of water put on carefully with a sponge will also remove them.

Renovating Old Trees.—"B." asks how to bring some old apple trees that have never received culture or pruning, and are now bearing worthless fruit, into profitable culture. If very old and unthrifty cut them down to make room for others. If still vigorous, dig about them in the Spring, top dress with a wheelbarrow load to each tree of a mixture of stable manure, muck, and wood ashes, scrape off the rough loose bark and engraft one-third of the old top with good varieties of fruit. Follow this up for three years until the old head is entirely changed and you may reasonably expect good fruit for many years. You will find some useful hints upon this topic in sundry numbers of the *Agriculturist*.

Books on Evergreens.—Isaac Atwood, Jefferson Co., Wis. We call to mind but two works of the kind, viz.: Mehan's Ornamental Trees, noticed page 234 of our XVth Vol. Price 75c.; and Warder's work on Hedges and Evergreens, noticed on page 112 of this volume. Price \$1.

Norway Spruce for Hedges.—Samuel B. Ormsbee, Dodge Co., Wis. Most of your questions are answered in the long advertisement of Parsons & Co., on page 92 March *Agriculturist*. We would procure small plants, worth about \$15 per 100. Such plants can be packed so as to bear a passage of several weeks. The latter part of April would be the most desirable time to have them shipped. They may, however, be set any time in May, or even in June, but with more risk. Such plants will form a good screen, and hedge even, in four or five years. They will make good screens for a fruit orchard.

Tuft Grass.—John Young, of L. I., takes it for granted that we know just what he means by this article. We think we do, for we have been in his region and seen it. We should not try to choke it out with other grass seed, but with manure. The tufts, all that we ever saw, grew on rather poor land. Plow deep, manure heavy, and till thoroughly, and we will warrant the tuft grass will come in.

Osage Orange.—S. W. Robinson, Taylor Co., Iowa. We published the information you desire in sundry articles last year. In an extended tour through the West, we found few Osage Orange hedges uninjured by frost, especially north of latitude 41°.... We desire as practical information as possible about Western farming.

Pea Bugs.—Robt. Winn, Hancock Co., Ky., and T. A. Griffin of Ill.—Scalding peas before sowing, will destroy the bugs or flies in them, and prevent their doing further mischief without injuring the peas themselves. They can be dropped into water almost boiling hot, and stand until the water is cold. Imported peas are much less troubled with bugs than seed raised in this country. Late sowing puts the parent bugs out of their reckoning, and is generally an effective remedy.

Clubs.—Rev. R. Osgood, Cayuga Co., N. Y.—The papers of a club need not be sent to one address. They may be at different Post Offices even, if procured by one person, and coming at the same date.

Rot in Turnips.—E. Ryder, of Putnam Co., N. Y., complains of this disease in his neighborhood—thinks the Swedes are more liable to it than the Ruta Bagas. We have heard very rarely of a similar complaint; it is perhaps owing to the character of the seed. We have always found cabbage and turnip seed imported from England, to do much better than the same varieties raised here. This imported seed can always be obtained now at the large seed stores in the cities. If the Swedes do not succeed well we would recommend Mr. Ryder to try the White Sugar Beet, or the Mangel Wurtzel. Roots should never be fed alone. Mixed with hay, or with meal, they give a much better return to the cultivator. If fed in Winter, the animals should be kept in warm stables and the roots never be given in a frozen state.

Compost for Potatoes.—W. J. Delpuechy, of Sheshequin, sends the following compost for dressing potatoes: 1 bushel of ashes, 1/2 bushel of plaster, 1/2 bushel of lime, 1/2 bushel of salt. Dose, a handful in the hill at planting, and a handful around the vines after they are up. We have tried all these ingredients in potato culture and found them good. The ashes have the most value.

Tape-Worms in Lambs.—Dr. R. T. Gill, Dutchess County, N. Y., writes that "he has lost a number of his largest and fattest lambs. They appear stupid, eyes blood-shot, or they run around in a circle. After death, tape-worms are found in their small intestines. I find nothing about the tape-worm in sheep, in any agricultural works at hand. You will oblige me by bringing the subject before the Farmer's Club of the American Institute."... We do not "patronize" the so called "Farmer's Club" referred to, and therefore lay it before the larger, genuine Farmer's Club who read the *Agriculturist*.

Corn Growing Twice—Poultry Manure.—Benj. Fessenden, Providence Co., R. I., writes that, "last year he sowed corn in drills for fodder, manuring in the drill with hen manure, and dropping the corn upon it. The season was so wet that the manure proved too strong for the fodder, and it grew but two feet. He cut it and there was a second growth of over six feet." The manure probably injured the corn it came in direct contact with, but the wet season did more to retard its growth. It is better however, to mix a quantity of muck, or loam, and plaster of Paris, if you have it, with the poultry manure, before applying it in contact with seed.

Cockroaches.—"It is said" that the green leaves, of the American Hellbore or Indian Poke weed, are a specific against cockroaches. Sprinkle a little molasses over the leaves, and place them near the haunts of the "bugs," which will readily eat them and as readily die from the effects. Another plan is to strew cucumber parings in their haunts, which they eat freely, and are poisoned by them. So it is said.

It is said that the Havre (French) Courier, says that no fly will enter a room in which a wreath of walnut leaves is hung up. Is that so?

Gherkins.—D. Stebbins, Cattaraugus Co., N. Y. Plant and cultivate gherkins at the same time and similar to cucumbers, which they somewhat resemble, although much smaller. They are used only for small pickles.

Dwarf Pears.—Dr. Jarboe, of Kentucky.—It will pay to plant dwarf fruit trees, if you take care enough of them.

Cutting Timber for Posts.—E. Hanes, of N. J., gives us the details of an experiment in setting posts. Those cut in June and set green lasted fifteen years and over. Those set dry lasted only five. The time in which the dry posts were cut is not stated. It was probably in Spring before the leaves started. We regard mid-Summer, as the best time, to cut timber for posts. The bottoms should be charred upon the outside. They should stand in the ground the top end downwards. The charring should extend a little above the surface of the ground.

Leaves in the Orchard.—A. R. Pierce, of Windham Co., Vt., alluding to our advice last Fall, to collect tree leaves from the forest, roadsides and orchard, for hot-beds and bedding, asks if it would not be better to cart leaves to, rather than from the orchard? If all the leaves carted into an orchard would remain there, the case would be different, but so many blow away to be lodged under the fences, that they are of little account to the orchard. Better use them as absorbents of the liquids which usually run to waste in the stables, and mixed with lime and muck, return them to the orchard in the form of a rich compost.

Gas Lime.—"Whistler at the Plow" wants to know if we endorse the views of the Patent Office Report on gas lime. We should not like to endorse anything from that quarter. It will undoubtedly liberate the ammonia from guano. The compost he speaks of will be efficient.

Convention of Agricultural Editors.

In response to a circular of inquiry, sent out May 8th., there seems to be an almost unanimous concurrence in the opinion that it will be best, on the whole, to defer calling the proposed Convention of Agricultural Editors, until the meeting of the American Pomological Society in New-York city, on the 14th of September next, at which time it is hoped that, so far as practicable, the entire Agricultural press of the country will be represented. Arrangements for time and place of a first meeting will be announced in due season.

New Books.

LIFE THOUGHTS.—We have listened to but few sermons by Rev. H. W. Beecher, yet we have always carried away sundry notes of beautiful passages that seemed to lie imbedded in the stratum of the discourse like nuggets of gold in the quartz rock. These notes we have afterwards repeated in the home circle and filed them away as treasured fragments. We were not a little surprised to find upon our table recently, a neat volume of 300 pages, entitled "Life Thoughts gathered from the extemporaneous discourses of H. W. Beecher, by one of his congregation," which on opening we found to contain many of the very passages we had noted down, with hundreds of others new to us. The book is published by Phillips, Sampson & Co., Boston, (at \$1). Whatever any one may think of Mr. Beecher as a man, or of his "isms" or politics, he cannot fail to be pleased with a book filled with glowing thoughts expressed "in words that burn," such as the following passages selected from a hundred we had marked to cull from:

"The superfluous blossoms on a fruit tree are meant to symbolize the large way in which God loves to do pleasant things."—"Many men want wealth—not a competence alone, but a five-story competence. Everything subserves this, and religion they would like as a sort of lightning rod to their houses, to ward off, by and by, the bolts of Divine wrath."—"A helping word to one in trouble is often like a switch on a railway track—but one inch between wreck and smooth-rolling prosperity."—"Some men are like pyramids, which are very broad where they touch the ground, but grow narrow as they reach the sky."—"I can forgive, but I cannot forget, is only another way of saying, 'I will not forgive.' A forgiveness ought to be like a canceled note, torn in two and burned up, so that it can never be shown against the man."—"In this world, it is not what we take up, but what we give up, that makes us rich."....

THE NEW CLERK'S ASSISTANT is the title of a volume received from C. M. Saxton, 25 Park Row, New York, Publisher. This work contains 600 pages, and over 1,000 forms for legal documents of almost every conceivable kind required by bankers, merchants, auctioneers, mechanics, farmers, and professional men. It embraces forms for mortgages, agreements, contracts, notes, bonds, wills—in short, for any and every paper needed to be drawn up in legal form. It is adapted to New England Northern and Western States, and California. The volume is bound in leather, and sold at \$2.50.

DICTIONARY OF TRADE PRODUCTS, Commercial, Manufacturing, and Technical Terms and Words. This is a useful little volume of 422 closely printed pages, by the well-known P. L. Simmonds. F.R.G.S., F.S.S., published by G. Routledge & Co., London, and 18 Beekman-street, New York. We find in it many definitions of technical terms—especially foreign ones—not included even in the unabridged edition of Webster's Dictionary....

The Indiana Farmer—"Home Papers."

We have just received from some one the April No. of the "Indiana Farmer"—This is the first we have seen of this journal, though the *Agriculturist* (more than double its size, but furnished at the same price) has been mailed to its address for a long time. In the number before us the Proprietor appeals to Indiana farmers:

"To sustain a home Journal, published at their own Capital, and edited by one born and raised within the State, and of course better acquainted with its peculiar wants than one who never trod its soil."

A good text if well followed. In this April number we find nine articles taken from the *Agriculturist*—including our own leader for the same month. Of these nine articles, five are uncredited. Is this a fair sample of the numbers not sent us? The paper contains thirty-two 2-column pages of (home?) matter, of which, twenty columns, (or about one-third of the whole paper) is transferred from the *Agriculturist*. We admire their judgment in going to so good a source—but our admiration would have been doubled had these articles all been duly credited—with the credit accompanying each article, rather than a page of the cover.

We are glad, too, to have such strong testimony that the *Agriculturist* is really a "home paper" for Indiana farmers, and in consideration of the compliment thus paid, shall make no appeal to our "copyright."

Agricultural Exhibition Lists Wanted.

We wish to obtain, for publication, as complete a list as possible of all State and County Agricultural Exhibitions to be held the present year, in the United States and British provinces, and we shall be obliged to those who will early send us in brief: 1st, name of State or County 2nd, State; 3rd, place; 4th, day of opening and day of closing.

Boys' and Girls' Own Columns.

Different kinds of Type.

Several of our young readers, and one "old one," thinks it would interest many readers if we would set up a few sentences in different kinds of type and describe them. Well, this paragraph is set in *Bourgeois* so far.

The sentence we are now writing will be set in *Brevier* type, which you will see is the kind most used in this paper. It is a little smaller than that above, and our printer says it will not hurt the eye-sight of the young, and the old can read it without difficulty.

This sentence is marked to be set in *Minion* type, the next in size to *Brevier*, but we use none of it in this paper—except in the present instance, for the purpose of showing the type.

We now come to *Nonpareil*, which is the kind generally used in the Boy's and Girl's department. Twice as many words can be put on a page of this type as in one of *Bourgeois*. It is not so good for the eyes of older people, and we use little of it unless much crowded for room.

We now come to *Agate* type which is smaller still. This is used for the advertising pages. There are still smaller sizes, called *Pearl*, *Diamond*, and *Ruby*, but we have none of them at hand. There are also larger sizes called *Long Primer*, *Small Pica*, *Pica*, *English*, *Great Primer*, &c. Books are most frequently printed in *Long Primer*.

All the above are set up *solid*, that is the pieces of type are set together with nothing between them. This paragraph will be set in the above kinds of type, four lines of each,

but *lead*; that is, a thin strip of type metal called a "lead," is put between each row of letters, or lines. The first four lines are *Bourgeois*; the second four are *Brevier*; the next four are *Minion*; the next four are *Nonpareil*, and the last four are *Agate*. You see how much more open they appear, and how much more pleasant to the eye. When much crowded for space an article or part of an article is set in solid type like the first examples above, because the leads take up room as you will see. Sometimes an article will not quite go into a column or page, and the man making up the page will take out a few leads from the bottom of a column. As above stated, these last lines are *Agate lead*. You will see that while one lead is put between the lines of each kind, there are three leads put in to separate the different kinds of type.

PROB. 30.—A FLORAL ENIGMA, containing 32 letters which spell the names of four beautiful Flowering Bulbs—the names being arranged in the alphabetical order of their first letters.

The 14, 19, 3, 10, is the name of a farm implement.
32, 29, 2, 6, 11, 15, 14, is an excellent root.
23, 21, 23, 26, 27, 12, 18, a girl's name.
14, 15, 25, 15, 8, a boy's name.
6, 1, 3, 28, 26, name of a living general.
30, 9, 5, 24, 6, 22, 25, 31, 18, name of a State.
11, 3, 2, 10, 22, 2, a country in Europe.
6, 10, 15, 18, 16, what no boy should ever do.
7, 8, 29, 28, 4, 20, a support for old age.
32, 31, 32, 32, 31, 25, a certain kind of apples.
14, 17, 15, what boys and girls love.

ANSWERS TO PROBLEMS (not before acknowledged).—J. F. Hunt, Lee Co. Iowa, 27, 28, 29; Pendleton Maryott, Tioga Co. Pa., 27, 29; Simon Warner, Chester Co. Pa., 29; S. W. Stanland, Brown Co. Ill., 29; Jno. S. Young, Suffolk Co. N. Y., 29; E. P. Lowe, Jersey Co. Ill., 27, 29;

ACKNOWLEDGEMENTS.—Problems have been contributed which we can not find room for, at least not yet, by the following: C. Hoffman Jr., Dauphin Co. Pa.; Danl. C. Hastings, Rush Co. Ind.; O. W. D., Great Falls, New-Hampshire; A. B. L. Warren, Queens Co. N. Y.; W. Hazell, N. Y. city; J. G. Sutphen, Somerset Co. N. J.; Abraham Myers, Oviell Co. Ill.; J. F. Hunt, Lee Co. Iowa; Stephenson P. Sharples, Chester Co. Pa.; Westboro, (2); Jacob D. Shank, Clinton Co. Pa. (2); Wealthy R. Noble, Berkshire Co. Mass.; G. K. O., Rockingham Co. N. H.; H. C. Jones, Marion, Ind.; P. Mix, New-Haven Co. Conn.; Jos. P. Humble, Martinville, N. J.; J. G. Guthrie, Decatur Co. Ind.; C. W. Bennett, Butler Co. Mich.; F. E. Pearce, Washington Co. Ohio; B. M. F., Jerusalem Station, L. I.; Susanne, Kings Co. N. Y.; Joseph Anderson, York Co. Penn.; Solomon T. Bearinger, Davis Co. Iowa; Eugene Juhl, Kings Co. N. Y.; H. B. Reist; Lancaster Co. Pa.



Alphabet used by the Deaf and Dumb.

For several years past we have had partial oversight of, and a special interest in one of the boys at the N. Y. Institute for the Instruction of the Deaf and Dumb. He has grown to be quite a man now. From him we have necessarily learned how to communicate ideas by means of the fingers instead of by articulate sounds, and it occurred to us that very many of our young readers would be interested in seeing how this is done. We have therefore procured the above engravings to show the various positions of the hand used to express the different letters of the Alphabet. Formerly, the manual Alphabet required both hands, and a Deaf mute who had lost one of his hands would be almost as bad off as a boy who had lost half his tongue. But the Alphabet which is now every where used, requires only one hand, which may be either the right or left. You will so often meet with Deaf and Dumb persons, that it may be not only a pleasant but a useful amusement for you boys and girls, to spend some of your leisure hours (if you have them) in learning the above

Alphabet. It is easily acquired, though at first you would, perhaps, make as slow and as awkward motions with your hands, as your little sister who is just learning to talk, does with her tongue; and the skillful Deaf mutes would perhaps laugh at you as you laugh at the little one. If you have never seen a company of Deaf mutes talking together, you can scarcely have an idea of how fast they talk. At the New-York Institute we have seen nearly three hundred children out playing upon the green, and though they were very quiet, they seemed to be just as active and to understand each other just as well as the noisiest crowd of boys and girls we ever saw together. Their fingers moved so rapidly that we could no more distinguish the motions than we could watch the separate movements of your tongue, when you are uttering a thousand letters in a minute.

Half-Year Subscriptions Received.

We would remind our readers that the present number closes the first half of Volume Seventeen, and this is a favorable time to invite their friends and neighbors to subscribe—for a whole year, if possible, but if not, then for a half year at half the annual rates in clubs or otherwise. Two half-yearly subscribers will count as one whole one, in our premium offers. See Last Page.

Market Review, Weather Notes, &c.

AMERICAN AGRICULTURIST OFFICE,
NEW-YORK, May 25, 1888.

The Wholesale Produce Markets have been very freely supplied with most of the leading kinds of Breadstuffs, and prices have declined considerably. Yet the demand has not been remarkably brisk, either for home use, or for shipment. Some dealers have purchased only such lots as they were immediately in need of, despite the temptation held out to them, in the way of greatly reduced figures. Prices are now lower for most brands of flour than they have been at this period, for several years, and holders are willing sellers, not anticipating any material improvement for some time to come. Produce is moving forward from the interior in unusually large quantities, and receivers appear indisposed to reserve their supplies. These circumstances, together with the absence of an active inquiry for export, and reluctance to speculate, have contributed to the dullness and depression in business. The demand for Breadstuffs from shippers has been seriously restricted by the rapidly advanced claims of shipowners. It is noteworthy that within the month the freight rates on Breadstuffs to Liverpool have been doubled. Flour and wheat are now in good supply and fair demand. They close with more steadiness at our revised quotations below. Corn is scarce and wanted. Rye, Barley and Oats are plenty and heavy. Cotton has been moderately dealt in at, however, easier prices. Provisions have been more active, but at irregular prices, closing generally cheaper than at the date of our last review. Hay, Hemp, Hops, and Grass Seeds have been in very moderate request at about former rates. Rice has attracted less attention, and has tended downward. Tobacco has been in lively demand at full prices. A fair inquiry has prevailed for Domestic Wool within the prices quoted below. The new clip will soon begin to arrive, and buyers are keeping back waiting for it, anticipating an easier market when the new clip arrives. In the wool-growing districts of the interior there is an apprehension that prices will open very low. In Chicago a considerable quantity of fleece Wool was purchased last season at an average of 42c. per lb., and sent Eastward, where it had to be finally sold at 12c. per lb. under cost. Our Western exchanges calculate that prices will open much below last year. Other articles of produce have presented no important variation from the previous month.

CURRENT WHOLESALE PRICES.

	April 24.	May 23.
Flour—Common to Extra State	\$4 15 @ 4 50	\$3 80 @ 4 15
Common to Fancy Western	4 15 @ 4 45	3 80 @ 4 15
Extra Western	4 30 @ 7 00	4 00 @ 7 00
Fancy to Extra Genesee	4 35 @ 6 50	4 15 @ 6 50
Mixed to Extra Southern	4 55 @ 8 00	4 40 @ 7 60
Corn Meal—Fine and Super	3 19 @ 3 60	3 00 @ 3 40
Wheat—Canada White	3 50 @ 4 00	3 50 @ 3 87½
Western White	1 15 @ 1 35	1 02½ @ 1 20
Southern White	1 15 @ 1 45	1 05 @ 1 22
All kinds of Red	1 18 @ 1 43	1 08 @ 1 30
Corn—Yellow, new	58 @ 62	80 @ 1 10
White, new	74 @ 75	72 @ 74
Oats—Western	49 @ 51	41 @ 42½
State	48 @ 49	39 @ 41
Southern	58 @ 46	26 @ 32
Rye	67 @ 70	67 @ 68
Barley	60 @ 70	56 @ 64
White Beans	1 31½ @ 1 37½	1 06½ @ 1 12½
Black-eyed Peas, per 2 bush.	3 20 @ 3 25	3 37½ @ 3 50
Hay, in bales, per 100 lbs.	50 @ 75	40 @ 70
Cotton—Midlands, per lb.	12½ @ 12½	12½ @ 12½
Rice, per 100 lbs.	3 25 @ 4 25	3 25 @ 4 00
Hops, per lb.	5 @ 8	4½ @ 7
Pork—Mess, per bbl.	18 10 @ 18 20	17 85 @ 18 00
Prime, per bbl.	15 00 @	14 31 @ 14 37½
Repacked Mess	12 50 @ 14 00	11 75 @ 13 57
Country mess	10 25 @ 11 25	10 50 @ 11 50
prime	7 50 @ 8 25	8 00 @ 8 50
Hogs, dressed, per lb.	5¾ @ 7	6 @ 6¾
Lard, in bbls, per lb.	11½ @ 11¾	11½ @ 11¾
Butter—Western, per lb.	12 @ 20	12 @ 19
State, per lb.	18 @ 28	17 @ 25
Cheese, per lb.	7 @ 9	6 @ 8
Eggs—Fresh, per dozen	11 @ 12	11 @ 12
Feathers, Live Geese per lb.	40 @ 47	40 @ 50
Sheep—Clover, per lb.	7 @ 8	7 @ 8
Timothy, per bushel	1 56 @ 2 25	1 75 @ 2 25
Sugar, Brown, per lb.	5½ @ 7½	5½ @ 7½
Molasses, New-Orleans, pr gl	35 @ 36½	35½ @ 37
Coffee, Rio, per lb.	9½ @ 11½	9½ @ 11½
Tobacco—Kentucky, &c. pr lb	6½ @ 17	6 @ 17
Seed Leaf, per lb.	9 @ 35	9 @ 35
Wool—Domestic fleece, per lb.	27 @ 45	27 @ 45
Domestic, pulled, per lb.	20 @ 32	22 @ 38
Hemp—Undr'd Amer'n pr ton	100 @ 115	105 @ 115
Dressed American, per ton	170 @ 185	170 @ 185
Tallow, per lb.	10 @ 10½	10 @ 10½
Oil Cake, per ton	36 @	36 @ 36 50
Potatoes—Bermudas, per bbl	4 00 @ 5 00	4 00 @ 5 00
Mercers, per bbl.	2 25 @ 2 75	2 25 @ 2 75
Peach Blow, per bbl.	3 25 @ 3 50	2 25 @ 2 75
Carters, per bbl.	15 @ 40	2 75 @ 3 00
Onions—Red, per bbl.	1 50 @ 1 75	1 25 @ 1 50
Apples—Russels, per bbl.	3 00 @ 3 50	3 50 @ 5 00
Asparagus—per bunch.		12 @ 18
Green Peas—Norfolk, per bbl.		5 00 @ 6 00
Rhubarb—per 100 bunches.		3 00 @ 4 00
Turnips—Kuta bagas, per bbl	40 @ 50	75 @ 87
Poultry—Fowls, per lb.	15 @ 17	14 @ 15
Chickens, Spring, per pair	75 @ 1 00	56 @ 1 00
Ducks, per lb.	18 @ 21	18 @ 21
Turkeys, per lb.	15 @ 18	15 @ 18

The total receipts and the total sales of Breadstuffs for 27 business days, ending with to-day, have been as follows:

	Receipts.	Sales.
Wheat—flour, bbls.	274,700	347,470
Wheat, bush.	539,000	730,250
Corn	502,200	741,600
Rye	26,760	74,400
Barley		101,300
Oats	173,350	

This statement affords the following comparison of the total receipts and sales in each of the last two months:

	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.
25 bus. days last mon.	202,000	56,250	672,500	35,000	12,500	56,150
27 bus. days this mon.	274,700	539,000	502,200	26,760		173,350

The following is a comparative statement of exports of the leading kinds of Breadstuffs from the port of New York, from Jan. 1, to May 17, both days included:

Wheat Flour, bbls.	1857.	1858.
Rye Flour, bbls.	352,763	478,591
Corn Meal, bbls.	1,223	2,063
Wheat, bushels.	20,830	26,693
Corn, bushels.	836,599	503,137
Rye, bushels.	1,451,070	1,263,650
	81,446	

Shipments from Milwaukee, this season, to May 15.
Flour, bbls. 100,343 Wheat, bush. 787,139
Corn, bush. 10,000 Oats, bush. 35,035

Shipments from Chicago, this season, to May 17.
Flour, bbls. 59,211 Barley, bush. 37,715
Wheat, bush. 2,224,930 Oats, bush. 2,140,3
Corn, bushels. 820,695

Stock in store, at Chicago, May 15.
Flour, bbls. 11,467 Rye, bush. 331
Wheat, bush. 714,382 Barley, bush. 24,055
Corn, bush. 71,475 Oats, bush. 101,115

N. Y. LIVE STOCK MARKETS.—RECEIPTS for four weeks ending May 19, were 13,390; or 1,928 more than the preceding four weeks. Receipts and variations of prices were, for week ending: April 28, (3,228) a shade higher; May 5, (3,413) c. lower; May 12, (3,589) c. lower; May 19, (3,159) c. higher; making a decline of c. per lb. during the month. May 19, prices ranged on estimated dressed weight as follows: First quality, 9c. @ 10c.; Medium grade, 8c. @ 9c.; Poor quality, 8c. @ 8c.; Average of all sales, 8c. The average price the corresponding week in 1857 was 13c. or more than 4c. higher.

VEAL CALVES have been in large supply for the past four weeks, receipts footing up 3,874 head. They are now worth 5c. @ 6c. per lb. gross or live weight for good calves, and 4c. @ 5c. for common animals.

SHEEP AND LAMBS.—Receipts for four weeks past have been more free, amounting to 20,585, against 13,851 the previous month. Fat Wool sheep are now worth 5c. @ 6c. per lb. gross. Good Lambs command ready sales at \$3.00 @ \$4.50 and \$5.00 for extra ones.

HOGS.—Arrival have been large and prices mainly low. Good Corn Hogs are only worth 5c. @ 5c. per lb. live weight.

THE WEATHER.—The prospects of an early Spring in April has been nearly spoiled in May by a succession of cold rains, nearly every day, which have continued to the present time with very little sunshine intervening. Crops put in early and well sprouted, or up before the rains came on, appear to stand it very well, while for those put in later, we fear many of them will rot in the ground. Beginning with our final notes of last month, our *Weather Notes*, condensed, read: April 25, clear and cool; 26, cold, mercury 32°. Peaches in bloom in danger of injury. Snow squall during the day; 27, cool, cloudy day, with wind N. E. and snow spits falling; 28, clear and cool; 29 and 30, clear and warm, peach, pear and cherry trees in bloom. May 1 and 2, cloudy but warm; 3 and 4, clear and pleasant; 5, 6, and 7, rainy most of the time, wind N. E.; 8, clear and fine; 9, cloudy and cool; 10, cloudy A. M., rain P. M.; 11, cool rainy day, ground very wet, and work getting backward; 12 and 13, clear and fine; 14 and 15, rainy days; 16 and 17, cloudy and cool; 18, wind N. E., and raining most of the day; 19, warm but cloudy; 20, cloudy A. M. N. E. rain, finishing with thunder showers P. M.; 21, sprinkling of rain; 22, 23, mostly clear; 24, cloudy, with a sprinkling of rain.

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Distilleries of all kinds, for making brandy and alcohol from Chinese Syrup. Steam and horse cane mills, syrup pans, skimmers, dippers, syrup gauges and pumps, brewing apparatus, by steam or fire
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Cheapest and Best Planing Machine ever made. Six sizes. Prices \$25 to 75. Address [for full information] **H. H. BAKER,** New-Market, New-Jersey.

PIANOS! elegant 64 oct. rosewood Pianos new and perfect for \$150; do. round corners, \$165; 7 oct. do. \$185; do. inlaid with pearl and serpentine moldings, \$210; warranted Melodeons in proportion. **J. M. EDNEY, 147 Chamber-st.**



STRONG AND DURABLE.—LIGHT OF
draft to the team. Will cut all kinds of grass better than it can be done with a scythe—leaving it spread—so as to save labor of spreading it. It can be worked at a slow or fast gait and by or without a driver. It is easily managed and safe to the driver. All we claim for it is admitted by those who use it and it has received their universal approbation.

I am making them for the coming season, when desired with a hoist for raising the finger board, a very simple and efficient addition, and can also furnish when desired a very simple Reaping attachment—which does not at all affect its simplicity or efficiency as a mower.
R. L. ALLEN, 191 Water-st.

Mr. R. L. ALLEN, NEW-YORK.—The subscriber having seen Allen's Patent Mowing Machine in use, both in heavy and light grass, of different sorts, is prepared to speak of its performance with the highest approbation. It was drawn by a pair of light horses with apparent ease, cutting a wide swath perfectly clean, whether the grass were standing or badly lodged, and leaving it spread in the best possible manner. This was done during and immediately after a heavy shower, and without any clogging of the knives.

MARSHALL P. WILDER,
President of the U. S. Agricultural Society.

I used one of your Mowers in cutting my entire crop this season; then sold it, and it afterward cut the crops of three other farmers, each of whom bought it. One man paid \$150 for it. The whole cost of repairs for the season was not one dollar. Another neighbor cut 240 acres with it at no expense for repairs of any consequence. We all consider it in this neighborhood as the only satisfactory machine ever used here.

JAMES E. DUNLAP,

Jacksonville, Morgan Co., Ill., Dec. 1857.

We cut our entire crop of grass with your Allen Mower this season, and then sold it for \$240. It is now in constant use and gives full satisfaction. It is daily running in such grass and clover as used to be considered impossible to be cut by machines.
C. G. & A. STARKWEATHER,
Stockton, California, June 17, 1857.

SUGAR MILLS OF THE MOST APPROVED PATTERN, (Three Iron Rollers in Iron Frames.)

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One-horse Vertical Mill presses 30, to 40 gallons juice per hour. Price \$36 00
Two-horse Vertical Mill presses, (double-gear), 45 to 60 gallons juice per hour. 78 00
Two-horse Horizontal Mill, with vertical shaft to apply lever to, and is worked by horses traveling around it in the same manner as Vertical Mills, yields 45 to 60 gallons per hour. 90 00
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Four-horse Horizontal Mill, (back gear,) suitable to attach to threshing or other machine power. 125 00
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Ten-horse Horizontal Mills, (back gear,) with endless aprons. 400 00
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Round, Oval, Oblong and Square Kettles and Pans for furnace and for steam boiling; Furnace Doors, Grate Bars, Dampers, Sliding Dippers, &c.

Pamphlets, containing printed diagrams and full descriptions of all of the above; also, an account of the most successful experiments of the past season, with the best general directions that can be deduced therefrom, and now in course of publication, and will be ready for gratuitous distribution by us after the first of March. Parties wishing them sent by mail, please inclose a three cent stamp.

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Cincinnati, Ohio.

TO THE FARMERS. HAY DEALERS, AND PLANTERS OF THE UNITED STATES.—**INGERSOLL'S IMPROVED PORTABLE HAY AND COTTON PRESSES,** combines greater power and portability, requires less labor, occupies less space, and costs less money than any other hand power machine for baling HAY OR COTTON ever offered to the public. It has recently been much improved, and is warranted to give satisfaction.

We have numerous letters from those who have seen and used these presses during the past season, similar to the following from **Wm. Thompson, Esq., South Londondary, Vt.,** who writes Feb. 8, 1858, as follows:

GENTS: "I think your press, with the improvement you have made recently, will exceed anything of the kind yet got up, for it will press more in a day, with only two hands to work it, and do it easier, than any other press in New-England."

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Presses constantly on hand and other sizes and for other purposes made to order. For further information call or address the

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N. B.—The Brooklyn and Williamsburg City Cars run up to Greenpoint and the New-York Dry Dock stages go to the Greenpoint Ferry.

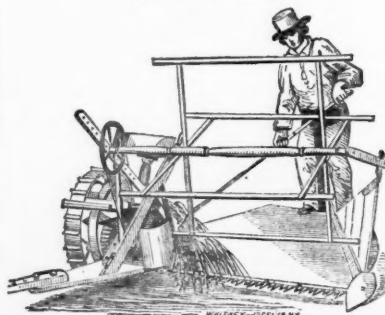
PERKINS' Corn Husking Machine, \$5 50.
Agents wanted to solicit orders in every Town and County. Terms usually liberal. Address **J. PERKINS & CO.,** West Killingby, Conn.

PITKINS' Potato Digger will dig as fast as fifteen men can pick up—for sale at Agricultural Depot, 100 Murray-St., N. Y. **HENRY F. DIBBLEE.**

FARM IMPLEMENTS OF MOST AP
proved patterns, made in best and most durable manner, and at low prices. Our large assortment embraces a most every implement, tool or seed wanted by the Farmer, Planter or Gardener. For sale by
R. L. ALLEN,
191 Water-st., New-York.

FOR THE HARVEST OF 1858.

The best Combined Reaping and Mowing Machine in use, as endorsed by the United States Agricultural Society.



Manny's Patent with Wood's Improvement.

It is with much pleasure and renewed confidence, that I offer my machine to the Farmers for the coming harvest, with all its improvements and increased high reputation as a combined Machine and Single mower. The large sale the past season, and great success at the National Trial of Harvest Implements at Syracuse in July last, where it was awarded one Gold and two Silver Medals, is conclusive to every unprejudiced farmer that it is the most approved machine of the kind in use, and the subscriber begs to say that they will be perfect and complete in workmanship and material, and are offered to them on terms accommodating and suited to the times. With each machine will be furnished two scythes, two extra guards, two extra sections, one extra pinion, and wrench.

Warranted capable of cutting from 10 to 15 acres of grass or grain per day, in a workmanlike manner.

Price of Machines as heretofore. The Combined Machine varies in price according to width of cut and its adaptation in size and strength to different sections of the country, from \$125 to \$150, delivered here on the cars.

Price of Single Mower, steel Bar. \$115.00

WALTER A. WOOD,
Manufacturer and Proprietor,
Hoosick Falls, N. Y.

KIRBY'S Little American Mower and Reaper RECEIVED THE SILVER MEDAL AT THE SYRACUSE TRIAL.

For lightness of draft, freedom from side draft, adaptation to smooth and uneven surfaces, strength, durability, simplicity of construction, we challenge the world to produce a machine to excel it. It cannot be clogged in any kind of grass, be it wet or dry.

PRICE OF MOWER \$106; Mower and Reaper combined, \$128. A pamphlet containing every information will be given free on application.

GRIFFING, BROTHER & CO., Agents,
60 Cortlandt Street,
Send your orders early. New York City.

SOMETHING NEW.

Farmers wishing to purchase Mowing Machines this season, are invited to examine **THE MOWING MACHINE** which we offer for sale. We are satisfied that they will give it the preference over any other machine now in use. It is a very light draft without the least side draft or weight on the neck of the horses, the cutterbar can be raised in an instant to go over obstructions, stones, stumps, &c. Many other advantages too numerous to mention in a newspaper advertisement. We will forward a circular with full particulars on application.

For sale by **JOHN MAYHER & CO.,**
United States Agricultural Warehouse and Seed Store,
197 Water-Street.

PRICE, \$110.00.

MANNY'S MOWING MACHINES—For
sale at Agricultural Depot, 100 Murray St., N. Y.
HENRY F. DIBBLEE.

THRESHING MACHINES WITH FIX
tures for hulling clover seed; also Mills for crushing the Chinese Sugar Cane. For Circular write to
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HORSE POWERS AND THRESHERS—
For sale at Agricultural Depot, 100 Murray-St., N. Y.
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RICHE'S PATENT IRON BEAM PLOWS.

Having made an arrangement with the Patentee for the Manufacture and sale of the above plows, we are now prepared to furnish them in any quantity. These plows have given the utmost satisfaction where ever they have been tried. The beam being short brings the horses nearer the work and enables the man to guide the plow with more ease. The beam being high and crooked prevents them from being choked out by vines or weeds—for sale by
JOHN MAYHER & CO.,
197 Water-street, N. Y.

PLOWS—A LARGE VARIETY OF ALL
Sizes and Kinds. HARROWS—Field and Garden Rollers, Seed and Grain Drills—Wagons—Carts—Wheel Barrows—Forks Hoes, &c., &c. Horticultural Tools—Pruning Shears and Knives—Lawn Rakes and Scythes—Pruning Saws and Hooks, &c., &c. For Sale by
R. L. ALLEN,
191 Water-St., New-York.

Just the thing

TO PLOW WITH.

HILDRETH'S IRON GANG PLOW

is one of the best things for plowing rapidly all kinds of land except "breaking up." Also for plowing in seed. A team goes over a large surface in a day. It is all iron, guides itself, cuts three furrows at a time, and does the work finely.

Farmers are invited to call and see one of these plows at 191 Water-Street, New-York City.

KETCHUM'S COMBINED HARVESTER. IMPROVED 1858 AS A REAPER.

SAVING OF EXPENSE OF DRIVER.

Many farmers drive and rake the grain off the platform. A little practice will enable any one to do it.

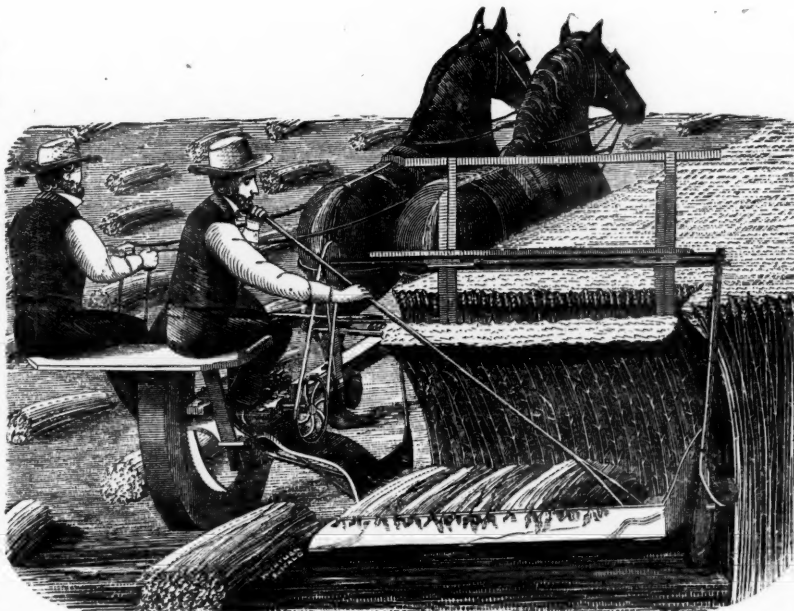
TEAM.

One light team can work this Harvester all day. In changing from a Mower to a Reaper, the main wheel is enlarged, which lessens the motion of the knives and diminishes the draft about one-third.

The change is effected simply and quickly, by bolting sections to the wheel, and the platform to the cutter bar.

REEL.

It being expressed by many farmers, that if, with the present advantages of the Ketchum Machine as a Mower, a reel could be at-



tached for reaping, it would stand unrivaled as a Reaper. A Reel has been added, which is very simple and easily attached, and adds but little weight to the Machine.

DRAFT.

At the U. S. Trial at Syracuse on the trial test of Draft of 14 Reapers, the one that had the greatest Draft was Rufus Dutton's, which was 543 lbs.—and the one that had the lightest Draft was Ketchum's, which was 330 lbs.—being a difference of 213 lbs.—nearly one half,—and making a difference in the Draft of the two machines for one day's work of 10 hours of 1,633,254,000 lbs. Sixteen hundred and thirty-three millions two hundred and eighty-four thousand pounds!!

FARMERS look at this. These figures are really startling, and should cause farmers to ponder and look carefully at the draft of Machines before they buy. The Ketchum Machine has been improved in this respect beyond any other machine in use. Our constant study has been to combine a certain power, momentum and strength, with the lightest draft, of any machine in the world. The above calculations are based upon trials and tests, made by the U. S. Agricultural Society. It is true that the Ketchum Machine, when first introduced to the public, had more draft than was desirable, but in this respect it has been improved from year to year, and now is the *lightest draft* of any in use, as the above figures clearly demonstrate.

AS A MOWER.

FRAME.

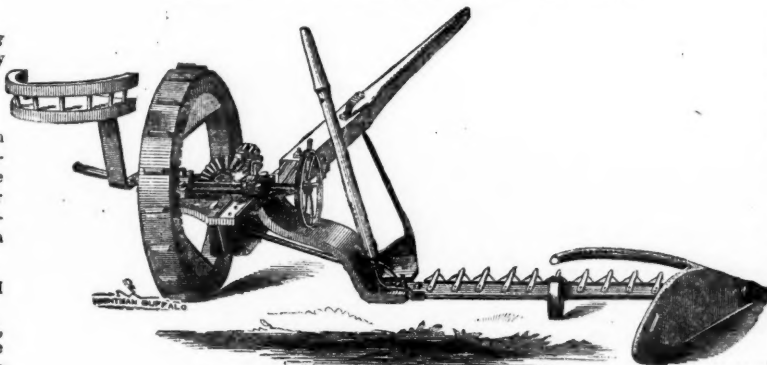
There is no frame surrounding the wheel, but it is located mainly in the interior of the wheel.

GEARING.

The main shaft rests in boxes on this frame, and the Gearing is attached in such a manner that there can be no cramping of the gear, or racking of the frame. This arrangement secures the requisite and a uniform speed of the knives.

ADJUSTABLE ROLLER WITH LEVER.

This is another improvement, which adds very much to the value of the Mower. The driver on his



seat can elevate the cutter bar to any desired height, and permanently fasten the same for removal; this has long been a desideratum, to aid in backing, in turning corners, in passing over obstructions, in going from field to field, or passing along the road.

ROLLER IN OUTER SHOE.

A small stationary Roller is placed in the outer shoe, on which the finger-bar lightly rests, thus diminishing the draft of the machine.

GUARDS.

We have improved our Guards, from the results of experience, which are strong, well braced and will not clog.

MATERIALS.

None but the best are used, and great pains are taken in selecting the very best quality of iron, made expressly for this machine. As to durability, simplicity, power and general adaptation to the wants of farmers, the Ketchum Machine stands unrivaled.

KNIFE, OR KNIFE SECTIONS.

These are made of the best of steel, with an oblong hole in the centre, to prevent clogging, and belong exclusively to the Ketchum Machine.

PATENTS.

It is well settled that a good machine will contain more or less of Ketchum's Patents. In the series of his inventions, there was secured to him by one patent, the attachment of the cutters, below the frame, and opposite the plane of the wheel in such a manner as to leave unobstructed space below the frame, and between the heel of the cutters with their supports and the wheel, so as to pass over the cut grass or grain without clogging; by another, the extension of the shoe upward and forward, and connecting with the draft of the machine; and supporting the rack or finger-bar by means of auxiliary framing, back of and above said finger bar; by another Patent, a very important result is attained, by placing upon the outer end of the cutter-bar, in close proximity to it, a hinged track clearer, at an acute angle with the cutter-bar, which rises and falls with the uneven surface of the ground, and turns the grass in, as it falls back from the cutters, and separates the cut from the uncut grass. By another Patent assigned to the proprietors, the open triangular tooth, or triangular hollow tooth, is secured exclusively to the Ketchum Machine. By another Patent, his invention to make a Combined Machine, was secured to him, which consists in enlarging the main wheel by false sections, removable at pleasure, and by means thereof the cutters are raised, their motion lessened and the draft of the machine very much diminished. He invented and obtained a Patent for an adjustable strengthening rod under the platform, to obviate all tremulous motion therein, and to crown and complete a perfect combination for a Harvester. He invented and patented an adjustable Roller, to attach to the cutter-bar while mowing.

Thus, the public will see that the Ketchum Machine has been kept in advance of the improvements of the age. The price of the Mower at Buffalo is \$110, and of the Combined Machine \$130.

BUFFALO, N. Y., near N. Y. Central Depot, on Chicago street, May, 1858.

R. L. HOWARD, Proprietor and Manufacturer.

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EXTRA PREMIUMS.

offered only in return for time and services to persons procuring and forwarding new subscribers to the *American Agriculturist*. The subscribers obtained will themselves be entitled to receive the seeds offered in our regular list, No. 1 to No. 52. Only one of the following premiums will be given on the same new subscriber.

Premium No. 4.

To any person obtaining a new subscriber for 1858 (vol. 17), after May 1st, we will, in return for the favor, send (post-paid) an ounce package of the seed of the *Long White French Turnip*, described on page 184 of May number. An ounce will be given for each new name. The new subscriber will himself be entitled to select the usual packages of the seeds, Nos. 1 to 52, offered in our February number. The names may be sent at \$1 each (or at club rates when for new clubs or additions to those already formed): but when the seed is to go to Canada or to the Pacific Coast, 14 cents additional will need to be sent to us for extra postage on each ounce of seed forwarded.

Premiums Nos. 1, 2 and 3.

Consisting of Webster's Unabridged Dictionary, Sugar Cane Seed, and the 18 varieties of European seeds, are still offered. For particulars, see May and April numbers.

PROSPECTUS OF THE

American Agriculturist.

TO BE

PRINTED IN THE GERMAN LANGUAGE.

Beginning July 1st, 1858.

We take pleasure in Announcing to the large class of German people interested in Farming, Gardening, Fruit Growing, Stock raising, Implements, &c., as well as those who have, perchance, but a small village or city plot under culture, that in order to meet the wants of those who as yet read only the German Language, we have completed arrangements, by which hereafter, the *American Agriculturist* will be printed simultaneously in both the English and GERMAN LANGUAGES.

There are in the United States alone, several millions of German people, among whom are found a large number of our most industrious and pains-taking cultivators of the Soil. In Germany more investigations are being made in Scientific and practical Agriculture, than in almost any other Country; and besides a large number of Agricultural Schools and Colleges, there are several periodicals devoted especially to practical Agriculture and Horticulture. But in this country next to nothing has been done in this department.

We, therefore, in response to oft repeated calls from the German people, very cheerfully enter the open field, and will endeavor to supply what seems to be a great desideratum, viz.: a Journal in the German Language, devoted exclusively to subjects connected with SOIL CULTURE, or to the out-door and in-door labors of Rural Life.

Since practical operations are founded upon the same principles, and the modes of tillage are the same, whether pursued by those speaking English or German, we believe that a Journal carried on in both Languages may be better in each, than if published in either Language only, since a wider class of practical experience will thus be drawn from.

Again, the use of the same engravings and editorials, as well as publishing force, in both editions, will economize expense, so that a much cheaper Journal, or a better one can be supplied for the same cost, than if two separate enterprises were carried on.

The *American Agriculturist* was originated in 1842, and it has now attained a circulation greater than any other like journal in the world, while it is on all hands acknowledged to be a standard work, unequalled for the large amount of practical information it supplies at a very small cost. Time, patience and long experience have been required to bring it to its present standard. The subscribers to the German edition will at once reap the benefit of all these advantages.

The teachings of the *AGRICULTURIST* are confined to no State or Territory, but are adapted to the wants of all sections of the country—it is, as its name indicates, truly AMERICAN in its CHARACTER.

The German edition will be of the same size and price as the English, and contain all of its reading matter, and its numerous illustrative engravings.

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Ten or more copies one year.....80 cents each.

An extra copy to the person sending 15 or more names, at 80 cents each.

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Subscriptions can begin Jan. 1st, July 1st, or at any other dates if specially desired. (For the present, year, subscriptions to the German edition, when desired, will be taken from July to December inclusive, at half the above yearly rates.)

The paper is considered paid for whenever it is sent, and will be promptly discontinued when the time for which it is ordered expires.

All business and other communications should be addressed to the Editor and Proprietor,

ORANGE JUDD,

No. 189 Water st., New-York.

*. It is desirable that subscriptions to the German edition be forwarded as early as possible, that the names may be properly entered and the wrappers written, ready to promptly mail the July number, which will be ready on or before July 1st. Be careful to give plain directions for the name of each subscriber, and of his Post Office, County and State.

Prospektus.

AMERICAN AGRICULTURIST,

SEVENTEENTH VOLUME.

„Amerikanischer Landwirth,“

erscheint mit 1. Juli d. J. in

Deutscher, vollständiger Ausgabe.

Mit Vergnügen kündigt wir der großen Klasse der deutschen Bevölkerung, welche ein Interesse hat an: **Acker, Garten und Obstbau**, an die deutsche Ausgabe des *American Agriculturist*, welche die neuesten landwirtschaftlichen Instrumente, sowie alle denjenigen, welche vielleicht nur ein kleines Stück Land in der Nähe eines Dorfes oder einer Stadt bewirtschaften, an, daß wir, um dem Bedürfnisse derjenigen, welche bis jetzt allein deutsch lesen, entgegen zu kommen, solche Einrichtungen getroffen haben, um die nächste Nummer des „*American Agriculturist*“ gleichzeitig mit der englischen Ausgabe in deutscher Sprache erscheinen zu lassen.

Es leben in den Vereinigten Staaten allein mehrere Millionen Deutsche; darunter befindet sich eine große Anzahl unserer unternehmenden und fleißigen Landwirthe. Deutschland hat in Bezug auf die wissenschaftliche und praktische Bekanntschaft der Landwirtschaft gründlichere Untersuchungen aufzuweisen, als beinahe jedes andere Land; es besitzt außerdem noch viele Ackerbauschulen und höhere landwirtschaftliche Anstalten; auch erscheinen dort mehrere ausschließlich der Land- und Gartenwirtschaft gewidmete Zeitschriften. In diesem Lande hingegen wurde bisher auf diesem Felde soviel als Nichts gethan.

Wir folgen demnach der oft an uns ergangenen Einladung von Seiten der deutschen Bevölkerung dieses Landes und bereiten mit Freude die uns offen gelassene Bahn, die—wie wir überzeugt sind, große Früchte auszuweisen: eine deutsche, ausschließlich den Interessen der Bodenkultur und den darauf bezüglichen Feld- und Gärtnereiarbeiten gewidmete Zeitschrift herauszugeben.

Seitdem die praktischen Verrichtungen auf dieselben Prinzipien basirt und die Arten der Bodenbearbeitung die gleichen sind, ob ausgeführt vom englisch oder deutsch sprechenden Arbeiter, muß, nach unserem Dafürhalten, eine Zeitschrift, sofern es sich um keine Sprachen handelt, eher in jeder, als in einer derselben erscheinen, wodurch ohnehin ein weiterer Kreis von Erfahrungen daraus gewonnen wird.

Auf der andern Seite, da die Anwendung derselben Illustrationen sowie derselben geistigen Materials die Kosten beider Ausgaben niedriger stellt, so werden entweder beide Zeitschriften billiger, oder es können beide besser und reichlicher ausgestattet geliefert werden, als wenn zwei von einander getrennte Unternehmungen ausgeführt würden.

Der *American Agriculturist* ward im Jahre 1842 gegründet; er hat nun eine größere Verbreitung gewonnen, als irgend eine ähnliche Zeitschrift der Welt, während er von allen Seiten als die vorzüglichste in ihrem Fache, unübertroffen wegen ihres großen Reichthums an praktischer und zugleich wohlfeiler Belehrung anerkannt wird. Zeit, Geduld und langjährige Erfahrung waren nothwendig, sie auf ihre gegenwärtige Höhe emporzuführen. Die Abonnenten der deutschen Bevölkerung werden von allen diesen Vortheilen nunmehr den reichlichsten Nutzen ziehen.

Die Lehren des *Agriculturnist* beschränken sich auf keinen einzelnen Staat oder Territorium; sondern sind berechnet für die Bedürfnisse aller Sectionen des Landes; er trägt, wie der Titel bezeichnet, recht eigentlich einen amerikanischen Charakter.

Die deutsche Ausgabe erscheint in demselben Format und zu dem gleichen Preise wie die englische; sie enthält allen ihren Lesstoff sowie alle die zahlreichen Illustrationen.

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Unterzeichnungen finden regelmäßig am 1. Januar resp. 1. Juli auf besonderes Verlangen jedoch zu jeder Zeit Statt. Für die 6 Monate des laufenden Jahres können Abonnenten für die deutsche Ausgabe unter den verhältnißmäßigsten Vertheilen der oben aus einandergesetzten Bedingungen der Jahrespreise bei Mehrabnahme eintreten.

Die Zeitschrift wird, wenn irgend wohin versendet, als bezahlt betrachtet; ihre Zustellung wird sofort eingestellt, wenn der Vorauszahlungstermin abgelaufen ist.

Alle geschäftlichen und andere Mittheilungen werden adressirt an den Herausgeber und Eigentümer

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Man wünscht, daß die Namen der Abonnenten auf die deutsche Ausgabe so bald als möglich eingeht, um die Postversendung zur rechten Zeit zu bewerkstelligen. Die Namen derselben mögen deutsch geschrieben werden, mit genauer Angabe der Postoffice, des County's und Staates.